SAMSUNG TECHWIN

NETWORK CAMERA

User Manual

SNB-3000(P)

CE

SAMSUNG

CAUTION

RISK OF ELECTRIC SHOCK.
DO NOT OPEN

CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK) NO USER SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

This symbol indicates that dangerous voltage consisting a risk of electric shock is present within this unit.

This symbol indicates that there are important operating and maintenance instructions in the literature accompanying this unit.

WARNING

- To reduce the risk of fire or electric shock, do not expose this appliance to rain or moisture.
- To prevent injury, this apparatus must be securely attached to the floor/wall in accordance with the installation instructions.
- If this power supply is used at 24V ac, a suitable plug adapter should be used.
- The camera is to be only connected to PoE networks without routing to the outside plant.

WARNING

1. Be sure to use only the standard adapter that is specified in the specification sheet.
   Using any other ada pter could cause fire, electrical shock, or damage to the product.
2. Incorrectly connecting the power supply or replacing battery may cause explosion, fire, electric shock, or damage to the product.
3. Do not connect multiple cameras to a single adapter. Exceeding the capacity may cause abnormal heat generation or fire.
4. Securely plug the power cord into the power receptacle. Insecure connection may cause fire.

5. When installing the camera, fasten it securely and firmly. The fall of camera may cause personal injury.
6. Do not place conductive objects (e.g. screwdrivers, coins, metal parts, etc.) or containers filled with water on top of the camera. Doing so may cause personal injury due to fire, electric shock, or falling objects.
7. Do not install the unit in humid, dusty, or sooty locations. Doing so may cause fire or electric shock.
8. If any unusual smells or smoke come from the unit, stop using the product. In such case, immediately disconnect the power source and contact the service center. Continued use in such a condition may cause fire or electric shock.
9. If this product fails to operate normally, contact the nearest service center. Never disassemble or modify this product in any way. (SAMSUNG is not liable for problems caused by unauthorized modifications or attempted repair.)
10. When cleaning, do not spray water directly onto parts of the product. Doing so may cause fire or electric shock
11. Do not expose the product to the direct airflow from an air conditioner. Otherwise, it may cause moisture condensation inside the Clear Dome due to temperature difference between internal and external of the dome camera.
12. If you install this product in a low-temp area such as inside a cold store, you must seal up the wiring pipe with silicon, so that the external air can not flow inside the housing.
    Otherwise, external high, humid air may flow inside the housing, pooling moisture or vapor inside the product due to a difference between internal and external temperature.

CAUTION

1. Do not drop objects on the product or apply strong blows to it. Keep away from a location subject to excessive vibration or magnetic interference.
2. Do not install in a location subject to high temperature (over 50°C), low temperature (below -10°C), or high humidity. Doing so may cause fire or electric shock.
3. If you want to relocate the already installed product, be sure to turn off the power and then move or reinstall it.
4. Remove the power plug from the outlet when there is a lighting storm. Neglecting to do so may cause fire or damage to the product.
5. Keep out of direct sunlight and heat radiation sources. It may cause fire.
6. Install it in a place with good ventilation.
7. Avoid aiming the camera directly towards extremely bright objects such as sun, as this may damage the CCD image sensor.
8. Apparatus shall not be exposed to dripping or splashing and no objects filled with liquids, such as vases, shall be placed on the apparatus.
9. The Mains plug is used as a disconnect device and shall stay readily operable at any time.
10. When using the camera outdoors, moisture may occur inside the camera due to temperature difference between indoors and outdoors. For this reason, it is recommended to install the camera indoors. For outdoor use, use the camera with built-in fan and heater.

FCC STATEMENT

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions :

1) This device may not cause harmful interference, and

2) This device must accept any interference received including interference that may cause undesired operation.

CAUTION

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment.
This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

IC Compliance Notice

This Class A digital apparatus meets all requirements of the Canadian Interference.-Causing Equipment Regulations of ICES-003.

IMPORTANT SAFETY INSTRUCTIONS

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use this apparatus near water.
6. Clean only with dry cloth.
7. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
8. Do not install near any heat sources such as radiators, heat registers, or other apparatus (including amplifiers) that produce heat.
9. Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong is provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
11. Only use attachments/accessories specified by the manufacturer.
12. Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.

13. Unplug this apparatus during lightning storms or when unused for long periods of time.
14. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as powersupply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

Apparatus shall not be exposed to dripping or splashing and no objects filled with liquids, such as vases, shall be placed on the apparatus

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PRODUCT FEATURES

- **Support various communication protocols**
  Supports TCP/IP, UDP, RTP/RTSP, SMTP for email, and FTP protocols as well as various internet protocols such as ARP, HTTP, HTTPS and DHCP.
- **Web Browser-based Monitoring**
  Using the Internet web browser to display the image in a local network environment.
- **Automatic Local IP Setup**
  Even a network novice can install it with minimum operations.
- **Alarm**
  If an alarm sensor is connected and it detects a motion, a message is sent to the registered address via FTP/email (SMTP) or stored in the SD memory card, or an alarm will signal to the alarm out terminal.
- **Intelligent Video Analysis (the event rule and the motion rectangle box are displayed only in the MJPEG Live screen.)**
  If an event rule is defined for the video analysis and it detects a motion in the configured rule area, a message is sent to the registered address via FTP/email (SMTP) or stored in the SD memory card, or an alarm will signal to the alarm out terminal.
- **ONVIF (Spec 1.01) Compliance**
  This product supports ONVIF Core Spec. 1. 01.
  For more information, refer to www.onvif.org.

Driving network video through global standardization

PRECAUTIONS – INSTALLATION AND USE

- Do not bend or drop the SD memory card.
- Do not store or use the SD memory card in a high temperature, high humidity or dusty place.
- Be careful not to apply foreign substances on the terminals of SD memory card.
- In case of cleaning terminals, wipe gently with a soft cloth.
- Before ejecting the SD memory card, release the checkbox <**SD Card Record**> in <**Alarm image**> and press [**Apply**] button. (page 61)
- If SD memory card have reached its lifespan, no data will be saved.
  In this case, purchase a new one and replace the SD memory card.

RECOMMENDED PC SPECIFICATIONS

- CPU : Pentium4 / 2.4GHz or higher
- Operating System : Windows XP(Service Pack2, Service Pack3) / Windows Vista / Windows 7
- Resolution : 1024X768 pixels or higher
- RAM : 512MB or higher

- Web Browser : Internet Explorer 6.0 or higher
- Video Card : Radeon, Nvidia
- Video Memory: 128MB
- DirectX 8.1 or higher

Compatible Broadband Routers

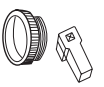
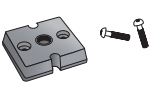
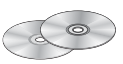
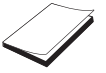
- Linksys / D-Link / Netgear

Compatible PoE Switches

- Linksys SRW224G4P / D-Link DES-1316 / SMC SMCPWR-INJ3

WHAT'S INCLUDED

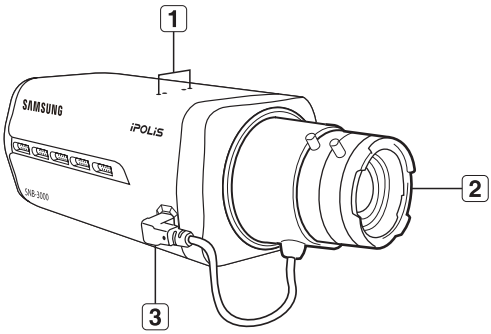
Please check if your camera and accessories are all included in the product package.

		
Camera	C Mount Adapter Auto Iris Lens Connector	Camera Holder (Mount) & Screws (2EA)
		
User Manual, Installer S/W CD, CMS S/W DVD	Quick Guide	

Lens Options

CS Lens	C Lens

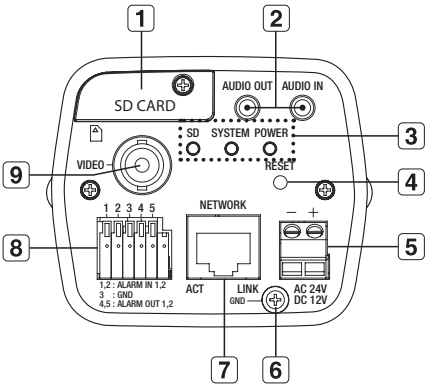
Front Side



Item	Description
1 Camera Holder (Mount) Holes	Used when you mount the camera onto the bracket by fixing the camera holder (mount) adaptor with the bracket.
2 Auto Iris Lens (Optional)	Installed on the lens adaptor.
3 Auto Iris Lens Connector	Used to supply power and output signal to control the iris of the lens.

- Wipe out a dirty surface of the lens softly with a lens tissue or cloth to which you have applied ethanol.

Rear Side



Item		Description	
1	SD Memory Card Compartment	Compartment for the SD memory card.	
2	Audio Out terminal	AUDIO OUT	Terminal for audio output.
		AUDIO IN	Terminal for audio input.
3	System, Power Indicators	SD	ON: A memory card is inserted and operates normally. Flashing: Failed to record, insufficient space, or inserted abnormally. OFF: Camera is off, camera is restarting, or memory card not in place.
		SYSTEM	ON: The camera is turned on and connected to the network properly. Blinking: During DDNS setup, or in case of setup failure, or in a state of unstable network connection OFF: When the system is rebooting, or turned off
		POWER	ON: While the power is on OFF: If the power is off

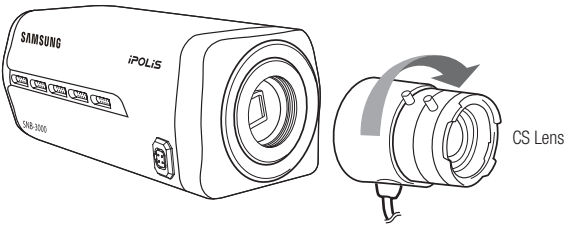
4	**Reset Button**	Resets the camera settings to the default. Press and hold it for about 3 seconds to turn off the system indicator and restart the system.	
5	**Power Port**	Used to plug the power cable.	
6	**GND**	Used for earth-grounding.	
7	**Network Port**	Used to connect to the Network cable.	
8	**I/O Port**	ALARM IN 1,2	Used to connect the alarm input signal.
		GND	Used for earth-grounding.
		ALARM OUT 1,2	Used to connect the alarm output signal.
9	**Video Out Port**	Video signal output port connected to the monitor.	

MOUNTING THE LENS

Disconnect the power before proceeding.

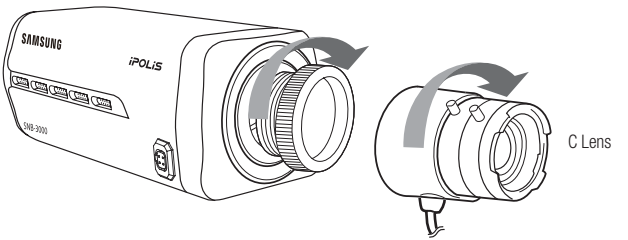
Mounting the CS lens

Turn the optional CS lens clockwise to insert it.



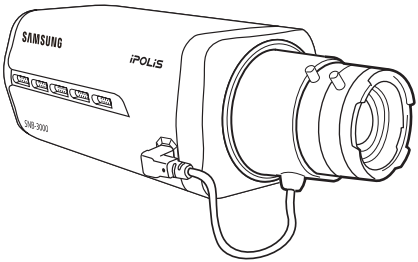
Mounting the C lens

Turn the C mount adaptor clockwise to insert it and do the same with the C lens.



Connecting the Auto Iris Lens connector

Insert the lens connector into the corresponding hole of the camera.



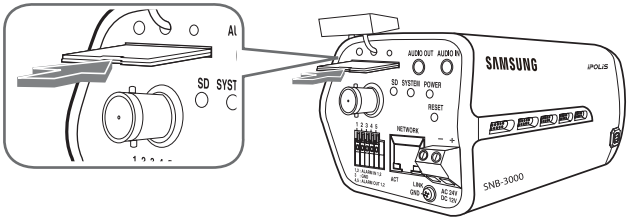
Focusing

Turn the lens left or right to control the zoom and focus the lens so that you can view a clear, sharp object.

INSERTING/REMOVING AN SD MEMORY CARD

Inserting an SD Memory Card

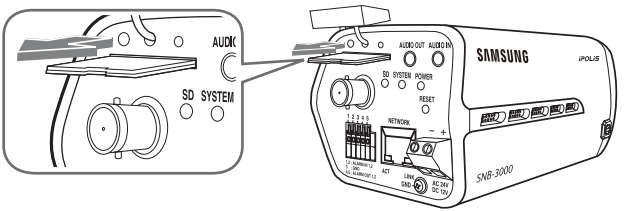
Push the SD memory card in the direction of the arrow shown in the diagram.



- Do not insert the SD memory card while it's upside down by force. Otherwise, it may damage the SD memory card.

Removing an SD Memory Card

Gently press down on the exposed end of the memory card as shown in the diagram to eject the memory card from the slot.



- Pressing too hard on the SD memory card can cause the card to shoot out uncontrollably from the slot when released.
- Before ejecting the SD memory card, release the checkbox <**SD Card Record**> in <**Alarm image**> and press [**Apply**] button. (page 61)

MEMORY CARD INFORMATION (NOT INCLUDED)

What is a memory card?

The memory card is an external data storage device that has been developed to offer an entirely new way to record and share video, audio, and text data using digital devices.

Selecting a memory card that's suitable for you

Your camera supports SDHC memory cards.
You may, however, experience compatibility issues depending on the model and make of the memory card.

Your camera supports SD memory cards.
Note that supported memory card capacity is up to 2GB.

For your camera, we recommend you use a memory card from the following manufacturers:
SDHC/SD Memory Card: Panasonic, Sandisk, Toshiba

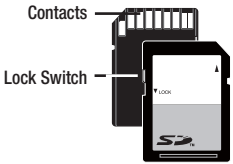
Your camera supports 128MB to 16GB (SD Card : 2GB) of memory card capacity.

Playback performance can be affected depending on the speed of memory card, so use the high-speed memory card.
To ensure proper recording of video data, we recommend you use a memory card that supports at least read/write speed 10Mbps and Class 6.

Memory Card Use

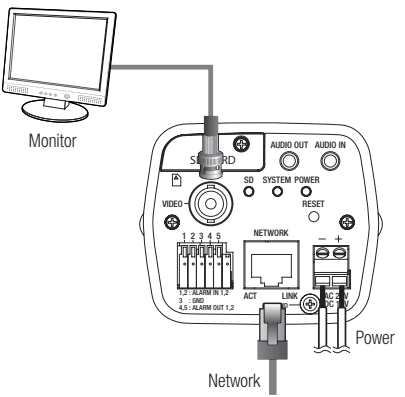
SD and SDHC memory cards feature a switch that disables writing data on to the media. Having this switch to the Lock position will prevent accidental deletion of data stored in the memory card but at the same time will also prevent you from writing data on to the media.

❖ Memory Card Components



SDHC

CONNECTING WITH OTHER DEVICE



Connecting to the monitor

Connect the [**VIDEO**] port of the camera to the video input port of the monitor.

Network Connection

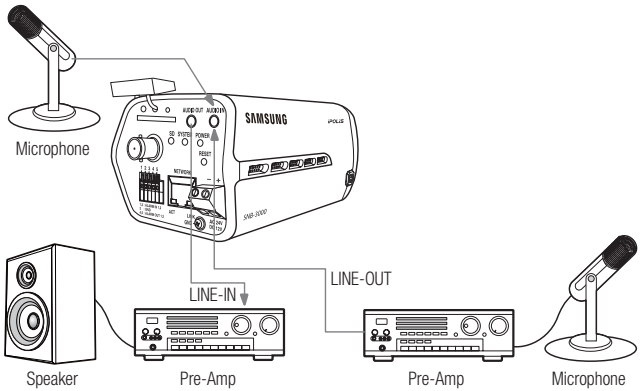
Connect the Network cable to the local network or to the Internet.

Power Supply

Use the screwdriver to connect each line of the power cable to the corresponding port of the camera.

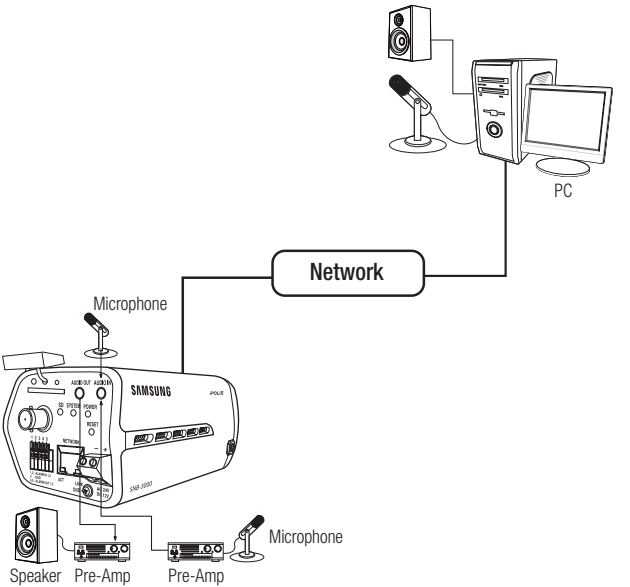
- Be careful not to reverse the polarity when you connect the power cable.
  You can also use a router featuring PoE (Power over Ethernet) to supply power to the camera.

Connecting to Audio Input/Output



1. Connect the AUDIO IN port of the camera with the microphone directly or LINE OUT port of the amplifier that the microphone is connected to.
   - **Direct Mic Connection** : Set Audio Input Gain high (10). (Refer to page 51)
   - **Line Out Connection** : Set Audio Input Gain low (1). (Refer to page 51)
2. Connect the AUDIO OUT port of the camera with the LINE IN port of the speaker.

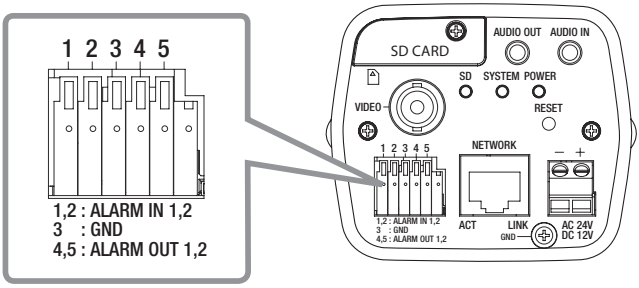
Audio I/O Block Diagram



- **Audio Codec**
  G.711 PCM. μ-law 64kbps 8kHz sampling
- **Full duplex Audio**
- **Audio in**
  Used for mono signal line input (Max.2.4 Vpp)
- **Audio out**
  Used for mono signal line output (Max.2.4 Vpp)
- **Line out impedance**
  600Ω

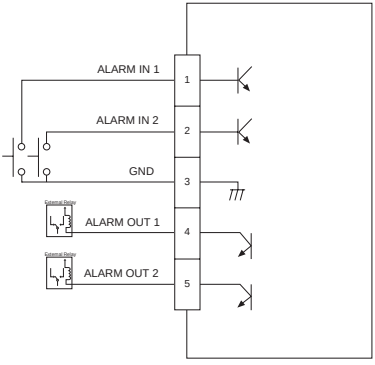
Connecting to the I/O port box

Connect the Alarm I/O signal to the corresponding port of the rear port box.



- ALARM IN 1, 2 : Used to connect the alarm input signal.
- GND : Used for earth-grounding.
- ALARM OUT 1, 2 : Used to connect the alarm output signal.

Alarm I/O Wiring Diagram



camera setup

You can configure the camera settings using the Web Viewer.

■ For accessing the Web Viewer, refer to "**Network Connection and Setup**". (page 31)

HOW TO USE THE MENU KEY

Follow the steps below if you run the Web Viewer for setting the menus.

1. Launch the Web Viewer.
2. From the [**Camera OSD**] menu in the left pane, click [**Menu**].
   The <**MAIN MENU**> screen appears.
3. Click the Up/Down (▲▼) buttons to move to a desired item.

4. Click the four direction (▲▼◄ ►) buttons to navigate through the menu items.
5. To change the value of a selected item, click the Left/Right (◄ ►) buttons.
6. Click [↵].
   Your changes will be applied.

: Exits the menu setup screen.
Before exiting the setup screen, select [**SAVE**] to save your settings, or [**QUIT**] to cancel them.

: Saves your settings and returns to the previous screen.

: Use this icon if you want to save your settings after you specified the mask area and privacy area, etc.
Once you saved your settings, the changes remain intact even if you select [**QUIT**] on exit.

: Use this icon if you want to delete a mask, or privacy area, etc.
Once you deleted your settings, the deletions remain valid even if you select [**QUIT**] on exit.

: This arrow appears next to a menu that contains sub items.

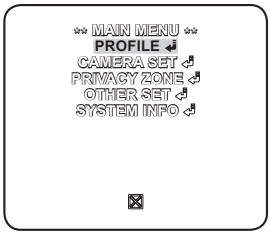
For the items with the "*" mark on the right, You can get help from "**Terminology**". (page 70)

■ If intelligent video analysis is enabled, camera's OSD menu operation can be set as an event.

MAIN MENU

You can configure the camera settings to your preference.

- **PROFILE**
  You can select a mode that is appropriate to the camera installation environment.
- **CAMERA SET**
  Configure the camera functions and settings.
- **PRIVACY ZONE**
  You can configure the privacy settings.
- **OTHER SET**
  You can configure more settings including FACTORY DEFAULTS.
- **SYSTEM INFO**
  Shows the camera version and type.



PROFILE

You can select one from the pre-determined modes as appropriate to your specific camera installation environment.

Your selection on each item in PROFILE will affect all other settings of the camera. For the setting, refer to "**PROFILE**". (page 69)

For selecting and saving each menu item, refer to "**How to use the menu key**". (page 22)

- **STANDARD**
  Automatically optimizes the camera settings to the normal environment.
- **ITS**
  This setting enables you to analyze the traffic situation and take the traffic information at a glance.
- **BACKLIGHT**
  This setting enables you to view a sharp background and object even in a severe backlight scene.
- **DAY/NIGHT**
  Automatically optimizes the camera settings to the day and night scene.
- **GAMING**
  This automatically configures the settings so that you can work in a stable illumination condition as indoors.
- **BANK**
  Automatically optimizes the camera settings to the bank environment.
- **CUSTOM**
  Your change to any of the PROFILE settings will switch the display to CUSTOM.

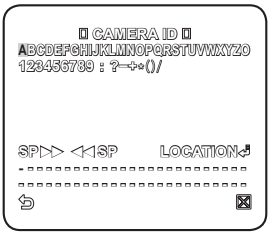
CAMERA SETUP

You can configure the general settings of the camera module.
For selecting and saving each menu item, refer to "**How to use the menu key**". (page 22)

CAMERA ID

Provide the ID and position for a camera that displays on the screen.

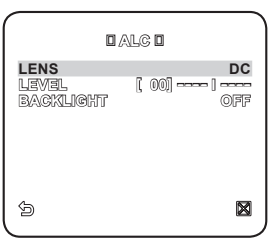
1. Select <**CAMERA SET**> - <**CAMERA ID**>.
2. Use the four direction (▲▼◄ ►) buttons to select a desired character.
   In the lower input box of the screen, the selected character will be entered.
   - You can enter up to 54 characters including alphabets, numbers and special characters.
3. When done, continue to select <**LOCATION**> to specify the display position of the camera ID.



IRIS

You can set the iris to control the intensity of radiation incoming to the camera.

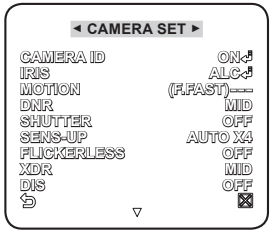
1. Select <**CAMERA SET**> - <**IRIS**>.
2. Use the left/right (◄ ►) buttons to select either <**ALC**> or <**ELC**>.
   - ALC : Controls the luminance automatically.
     - LENS : Select a lens to use.
     - LEVEL : Select the global brightness level.
     - BACKLIGHT : Select WDR or BLC.
     - WDR : Define the composition for weight factor, the shutter speed in WDR level, and select outdoor or indoor for white balance setup.
     - BLC (Backlight compensation) : Configure the backlight compensation area by defining the area size and location.
   - ELC : Controls the level electronically.
     - LEVEL : Select an overall brightness level.
     - BACKLIGHT : Set the area for the backlight compensation.
       If you select <**USER**> for <**AREA**>, you can select the area size and location.



■ If the iris is set to <**ALC**>, fixing the iris is your priority when you adjust AE and the shutter speed.

MOTION

You can specify a level of AGC for controlling the camera motion.
Select F.FAST if you want to monitor a very fast moving object in a low contrast scene, and S.SLOW if monitoring a very slow moving, inanimate object in the same condition.
As long as DAY/NIGHT is set to AUTO, the <**MOTION**> menu is not available.

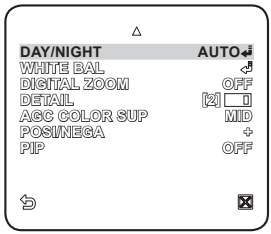


DNR

Reduces the noise on the screen.
This is useful, especially for a noisy screen.
Set it to <**USER**>, you can specify the level.

SHUTTER

The SHUTTER menu is used to set the fixed fast electronic shutter or auto fast electronic shutter.



SENS-UP

If the brightness of the video signal is too low, the Slow Shutter function will be activated. Slow Shutter can collect the individual max frame rate to adjust the setting.

FLICKERLESS

If set to <**ON**>, the shutter speed will be fixed to 1/100 second. This will prevent possible screen distortion due to a mismatch between the vertical sync frequency and the blinking frequency of the lighting.

- If IRIS is set to ELC / SHUTTER to AUTO, FIX, EXT mode / SENSE UP to FIX / AGC to FIX, the <**DIS**> menu will be disabled.

XDR

This will correct a brightness difference between different scenes for the optimal visibility. The higher the value is, the higher the correction level is.

DIS

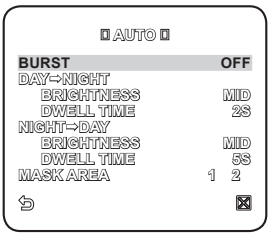
Automatically compensates for the flicker on the screen.
If set to <**ON**>, the image will be enlarged with digital zoom as much area as compensated.

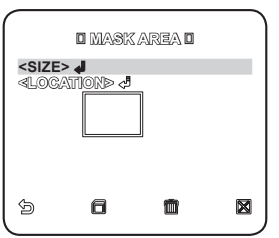
- If you set DIS to ON, the compensation area will be enlarged as set in the digital zoom factor.
- If you set the digital zoom factor to greater than the enlarged zoom factor for the compensation, the DIS function will be deactivated.

DAY/NIGHT

You can specify a recording mode according to the scene.

1. Select <**CAMERA SET**> - <**DAY/NIGHT**>.
2. Select a screen transition mode according to the illumination, and set options as appropriate.
   - DAY : Fixed to DAY mode, regardless of the scene.
   - NIGHT : Fixed to NIGHT mode, regardless of the scene.
     If BURST is set to <**ON**>, the burst signal will output.
   - AUTO : According to the luminance, this will switch DAY to NIGHT mode, or vice versa.
   - DAY➞NIGHT / NIGHT➞DAY : If set to <**AUTO**>, you can specify the brightness level triggering the mode switch between DAY and NIGHT as well as the interval.
   - MASK AREA : If there exists a bright spot light source in a night scene, you can specify the size and position as needed.
     Any excessively bright area in a night scene will be masked.

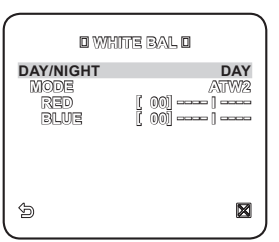




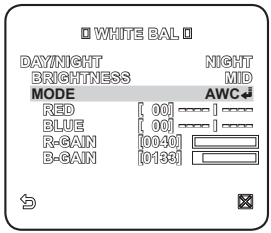
WHITE BAL

If you need to adjust the screen brightness, use the WHITE BALANCE function.

1. Select <**CAMERA SET**> - <**WHITE BAL**>.
2. Select a mode where you set the balance.
   - DAY : You can set the RED, and BLUE value in DAY mode.
   - NIGHT : You can adjust the <**WHITE BAL**> according to the ambient luminance.



3. According to the specified recording mode, select a WHITE BAL mode with necessary options.
   - BRIGHTNESS : Specify a brightness level triggering the switch from DAY to NIGHT mode.
   - MODE : According to the selected mode, you can adjust the RED and BLUE color level.
     - RED : Adjust the strength of the red color.
     - BLUE : Adjust the strength of the blue color.
     - R-GAIN/B-GAIN : Specify the current color temperature manually.
       - You can set the R-GAIN, and B-GAIN value only in AWC mode.



DIGITAL ZOOM

You can set the digital zoom factor and position.
When the zoom factor and position are defined, the digital zoom function will operate.

- If you set the digital zoom to a larger factor than the actual enlargement for compensation, the DIS function will be disabled.

DETAIL

You can adjust the vertical and horizontal sharpness, respectively.

AGC COLOR SUP

This will adjust the color scheme according to the AGC value.

POSI/NEGA

This will display the video brightness signal either normally or reversely.

PIP

You can view a main image with a sub image on the same screen.

- If more than one privacy zone is set and the PRIVACY SET is set to ON, the PIP function will be deactivated.

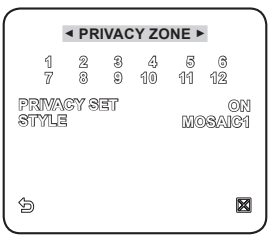
PRIVACY ZONE

You can set up to 12 privacy zones that will be hided for privacy of the subject when recording.

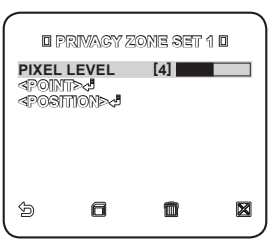
For selecting and saving each menu item, refer to "**How to use the menu key**". (page 22)

ZONE SETUP

1. Select <**MAIN MENU**> - <**PRIVACY ZONE**>.
2. Use the four direction (▲▼◄ ►) buttons to select a desired number.
   The Zone setup screen appears.



3. Select the <**PIXEL LEVEL**>.
   Specify the pixel unit level for the POSITION setting.
4. Select <**POINT**>.
   You will see dots on the screen.
5. Use the four direction (▲▼◄ ►) buttons to specify the position for each of the four dots.
6. Select <**POSITION**> and use the four direction (▲▼◄ ►) buttons to specify the position for each of the four dots.



7. Save the changes and move to the previous screen and select the <**STYLE**>.
   Select <**COLOR**> and pick a desired color.

▪ Setting one or more privacy zone and enabling privacy function will disable the PIP function.

OTHERS

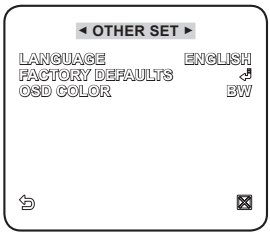
You can reset the camera, or select the OSD font color to your preference.

For selecting and saving each menu item, refer to "**How to use the menu key**". (page 22)

LANGUAGE

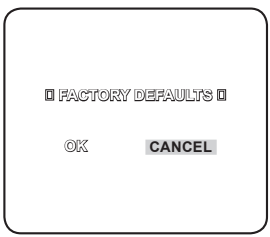
You can slect a preferred language for the screen display.

Select your language by using the left and right keys.



FACTORY DEFAULT

1. Select <**MAIN MENU**> - <**OTHER SET**> - <**FACTORY DEFAULTS**>.
   The FACTORY DEFAULTS setup screen appears.
2. Select <**OK**>.
   All the settings will be restored to the factory default.
   However, the language setting will not be restored.



OSD COLOR

You can set the font color of the user interface.

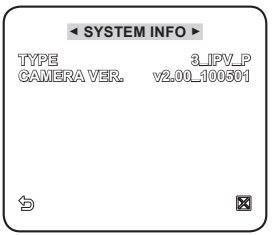
SYSTEM INFO

You can check the system information.

For selecting and saving each menu item, refer to "**How to use the menu key**". (page 22)

1. Select <**MAIN MENU**> - <**SYSTEM INFO**>.
2. The current system information is displayed.

- The camera type may different, depend on the video signal.



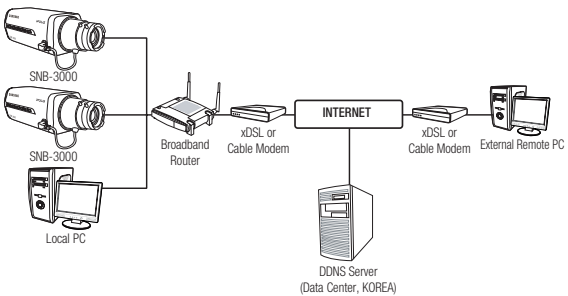
network connection and setup

You can set up the network settings according to your network configurations.

- Before installing or while using this program, visit the Samsung website www.samsungsecurity.com and download and upgrade with the latest S/W version available.

CONNECTING THE CAMERA TO AN BROADBAND ROUTER WITH THE XDSL/CABLE MODEM

This is for a small network environment such as homes, SOHO and ordinary shops.



Configuring the network settings of the local PC connected to an Broadband Router

Configuring the network settings of the local PC connected to an Broadband Router, follow the instructions below.

- Select : <**Network Neighborhood**> → <**Properties**> → <**Local Area Connection**> → <**Properties**> → <**General**> → <**Internet Protocol (TCP/IP)**> → <**Properties**> → <**Obtain an IP address automatically**> or <**Use the following IP address**>.
- Follow the instructions below if you select <**Use the following IP address**>:

ex1) If the address (LAN IP) of the Broadband Router is 192.168.1.1
IP address: 192.168.1.100
Subnet Mask: 255.255.255.0
Default Gateway: 192.168.1.1

ex2) If the address (LAN IP) of the Broadband Router is 192.168.0.1
IP address: 192.168.0.100
Subnet Mask: 255.255.255.0
Default Gateway: 192.168.0.1

ex3) If the address (LAN IP) of the Broadband Router is 192.168.xxx.1
IP address: 192.168.xxx.100
Subnet Mask: 255.255.255.0
Default Gateway: 192.168.xxx.1

▪ For the address of the Broadband Router, refer to the product's documentation.

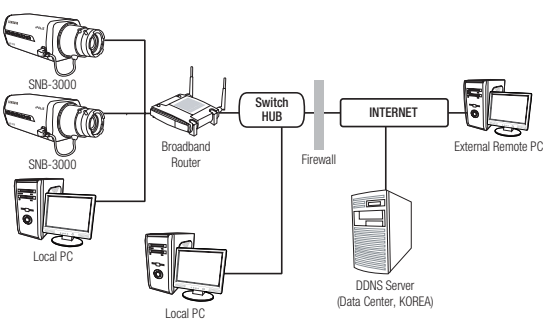
Checking if the Broadband Router is connected to the xDSL/Cable modem properly

Select <Status> from the Settings menu of the Broadband Router

- If it is properly connected, <**IP Address**>, <**Subnet Mask**> and <**Gateway**> provided by your ISP are displayed. Please remember these values because they are required so that an external remote computer of the Broadband Router connects to the camera. However, note that certain ISPs change the settings of <**IP Address**>, <**Subnet Mask**> and <**Gateway**> on a regular basis
- If the Broadband Router is not properly connected, press the [**Connect**] button to try to reconnect or check if the settings of the Broadband Router are correct.

CONNECTING THE CAMERA TO AN BROADBAND ROUTER WITH LOCAL AREA NETWORKING

This is for a large network environment such as corporate office, building, public office and factory.



Configuring the network settings of the local PC connected to an Broadband Router

Configuring the network settings of the local PC connected to an Broadband Router, follow the instructions below.

- Select : <**Network Neighborhood**> → <**Properties**> → <**Local Area Connection**> → <**Properties**> → <**General**> → <**Internet Protocol (TCP/IP)**> → <**Properties**> → <**Obtain an IP address automatically**> or <**Use the following IP address**>.
- Follow the instructions below if you select <**Use the following IP address**>:

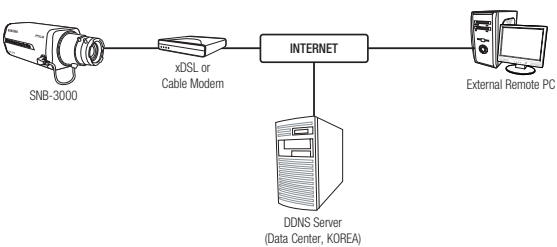
ex1) If the address (LAN IP) of the Broadband Router is 192.168.1.1
IP address: 192.168.1.100
Subnet Mask: 255.255.255.0
Default Gateway: 192.168.1.1

ex2) If the address (LAN IP) of the Broadband Router is 192.168.0.1
IP address: 192.168.0.100
Subnet Mask: 255.255.255.0
Default Gateway: 192.168.0.1

ex3) If the address (LAN IP) of the Broadband Router is 192.168.xxx.1
IP address: 192.168.xxx.100
Subnet Mask: 255.255.255.0
Default Gateway: 192.168.xxx.1

■ For the address of the Broadband Router, refer to the product's documentation.

CONNECTING THE CAMERA DIRECTLY TO A DHCP-BASED XDSL/CABLE MODEM



Setting the Broadband Router

This is enabled for a modem using DHCP.

1. Set the Static or Dynamic IP address. (pages 36~39)
2. Launch an Internet browser on the local PC connected to the Broadband Router.
3. Enter the Broadband Router's address in the address bar of the browser.
   ex) http://192.168.1.1, http://192.168.0.1
   or http://192.168.xxx.1

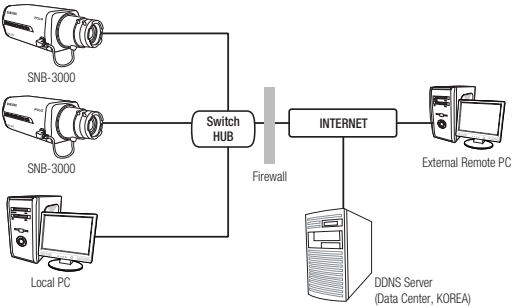
■ For the DDNS URL address, refer to "**To check the DDNS address**". (page 43)

4. When the Broadband Router is connected, the login window appears and prompts you to enter the password.
   - For the login IP and the password, refer to the Broadband Router's documentation.
5. When done, you will see the setup window of the Broadband Router. In the setup menu, select "**Automatic Configuration-DHCP**" for Internet Connection Type.
   - For the menu location of Internet Connection Type or DHCP selection, refer to the Broadband Router's documentation.
6. When done, click the [**Save**] or [**Apply**] button to save the settings.

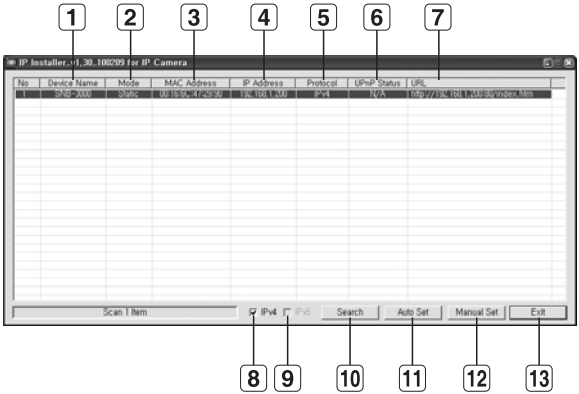
CONNECTING THE CAMERA DIRECTLY TO LOCAL AREA NETWORKING

Connecting to the camera from a local PC in the LAN

1. Launch an Internet browser on the local PC.
2. Enter the IP address of the camera in the address bar of the browser.



- A remote PC in an external Internet out of the LAN network may not be able to connect to the camera installed in the intranet if the port-forwarding is not properly set or a firewall is set. In this case, to resolve the problem, contact your network administrator.



Buttons used in IP Installer

Item	Description
1 **Device Name**	Model name of the connected camera. Click the column to sort the list by model name. However, search will be stopped if clicked during the search.
2 **Mode**	Displays either <**Static**> or <**Dynamic**> for the current network connection status.
3 **MAC(Ethernet) Address**	Ethernet address for the connected camera. Click the column to sort the list by Ethernet address. However, search will be stopped if clicked during the search.
4 **IP Address**	IP address. Click the column to sort the list by IP address. However, search will be stopped if clicked during the search. The factory default is "192.168.1.200".
5 **Protocol**	Network setting for the camera. The factory default is "IPv4". Cameras with the IPv6 setting will be displayed "IPv6".
6 **UPnP Status**	This function is not currently implemented.
7 **URL**	DDNS URL address enabling access from the external Internet. However, this will be replaced with the <**IP Address**> of the camera if DDNS registration has failed.

8	IPv4	Scans for cameras with the IPv4 setting.
9	IPv6	Scans for cameras with the IPv6 setting.
10	Search	Scans for cameras that are currently connected to the network. However, this button will be grayed out if neither IPv4 nor IPv6 is checked.
11	Auto Set	<**IP Installer**> will automatically configure the network settings for you.
12	Manual Set	You should configure the network settings manually.
13	Exit	Exits the IP Installer program.

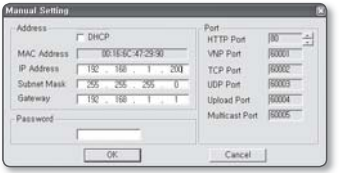
STATIC IP SETUP

Manual Network Setup

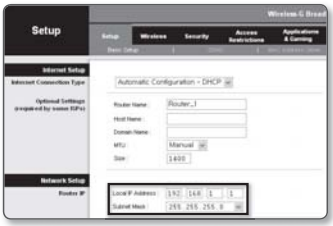
Run <**IP Installer.exe**> to display the camera search list.
At the initial startup, both [**Auto Set**] and [**Manual Set**] will be grayed out.

- For cameras found with the IPv6 setting, these buttons will be grayed out as the cameras do not support this function.

1. Select a camera in the search list.
   Find the MAC (Ethernet) address labeled on the rear of the camera.
   Both the [**Auto Set**] and [**Manual Set**] buttons will be activated.
2. Click [**Manual Set**].
   The MANUAL SET dialog appears.
   The default values of <**IP Address**>, <**Subnet Mask**>, <**Gateway**>, and <**HTTP Port**> of the camera will be displayed.
   The default <**PASSWORD**> is **4321**.
3. In the <**ADDRESS**> pane, provide the necessary information.
   MAC (Ethernet) Address : The MAC (Ethernet) address of the applicable camera will be set automatically so you don't need to input it manually.



If using an Broadband Router :



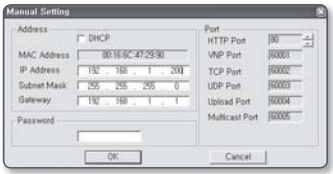
- IP Address : Enter an address falling in the Broadband Range provided by the Broadband Router.
  ex) 192.168.1.2~254,
  192.168.0.2~254,
  192.168.XXX.2~254
- Subnet Mask : The <**Subnet Mask**> of the Broadband Router will be the <**Subnet Mask**> of the camera.
- Gateway : The <**Local IP Address**> of the Broadband Router will be the <**Gateway**> of the camera.

If not using an Broadband Router :

For setting <**IP Address**>, <**Subnet Mask**>, and <**Gateway**>, contact your network administrator.

■ The values of VNP, TCP, UDP, Upload, and Multicast ports can not be changed manually, and will be adjusted according to the HTTP port value.

4. In the <**PORT**> pane, provide necessary information.
   - HTTP Port : Used to access the camera using the Internet browser, defaulted to 80. Use the spin button to change the HTTP Port value. The start value of the port is 80, and increases or decreases by 6 like 10000, 10006, 10012.



   - VNP Port : Used to control the video signal transfer, defaulted to 60001(TCP).
   - TCP Port : Video signal transfer port using TCP protocols, defaulted to 60002(TCP).
   - UDP Port : Video signal transfer port using the UDP Unicast method, defaulted to 60003(UDP).
   - Upload Port : Used to upgrade the software firmware, defaulted to 60004(TCP).
   - Multicast Port : Video signal transfer port using the UDP Multicast method, defaulted to 60005(UDP).
5. Enter the password.
   This is the login password for the "**admin**" user who accesses the camera.
   The default password is "**4321**".
6. Click [**OK**].
   Manual network setup will be completed.
7. When the manual setup including <**IP**> is completed, the camera will restart.

If the Broadband Router has more than one camera connected

Configure the IP related settings and the Port related settings distinctly with each other.

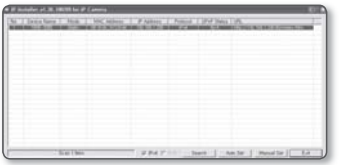
Category		Camera #1	Camera #2
IP related settings	IP Address	192.168.1.200	192.168.1.201
	Subnet Mask	255.255.255.0	255.255.255.0
	Gateway	192.168.1.1	192.168.1.1
Port related settings	HTTP Port	80	10000
	VNP Port	60001	10001
	TCP Port	60002	10002
	UDP Port	60003	10003
	Upload Port	60004	10004
	Multicast Port	60005	10005

- If the <**HTTP Port**> is set other than 80, you must provide the <**PORT**> number in the address bar of the Internet browser before you can access the camera.
  ex) http://IP address : HTTP Port
  http://192.168.1.201:10000

Auto Network Setup

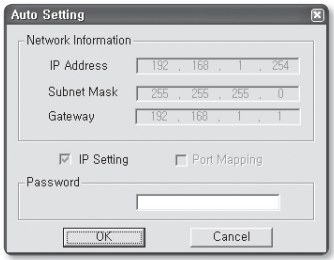
Run <**IP Installer.exe**> to display the camera search list.
At the initial startup, both [**Auto Set**] and [**Manual Set**] will be grayed out.

- For cameras found with the IPv6 setting, these buttons will be grayed out as the cameras do not support this function.



1. Select a camera in the search list.
   Find the MAC (Ethernet) address labeled on the rear of the camera.
   Both the [**Auto Set**] and [**Manual Set**] buttons will be activated.
2. Click [**Auto Set**].
   The AUTO SET dialog appears.
   The <**IP Address**>, <**Subnet Mask**>, and <**Gateway**> will be set automatically.

3. Enter the password.
   This is the login password for the "**admin**" user who accesses the camera.
   The default password is "**4321**".
4. Click [**OK**].
   Auto network setup will be completed.
5. The camera will automatically complete the network setting and restart.



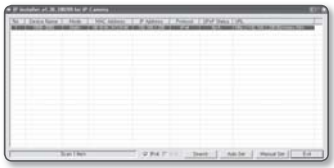
DYNAMIC IP SETUP

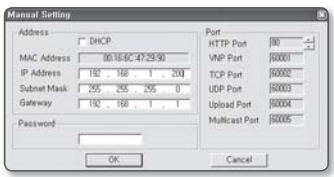
Dynamic IP Environment Setup

- Example of the dynamic IP environment
  - If an Broadband Router, with cameras connected, is assigned an IP address by the DHCP server
  - If connecting the camera directly to the xDSL or cable modem using the DHCP protocols
  - If IPs are assigned by the internal DHCP server via the LAN

Checking the dynamic IP

1. From a local PC, run <**IP Installer**> to display a list of cameras that are assigned <**Dynamic IP**>.
2. Select a camera in the list, and click [**Manual Set**] to check the <**Dynamic IP**> of the camera.
   If you uncheck <**DHCP**>, you can change <**IP**> or <**PORT**> to <**STATIC**>.





PORT RANGE FORWARD (PORT MAPPING) SETUP

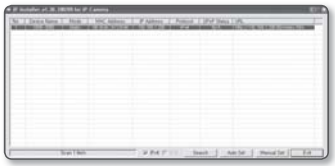
If you have installed an Broadband Router with a camera connected, you must set the port range forwarding on the Broadband Router so that a remote PC can access the camera in it.

Manual Port Range Forwarding

1. From the Setup menu of the Broadband Router, select <**Applications & Gaming**> - <**Port Range Forward**>. For setting the port range forward for a third-party Broadband Router, refer to the user guide of that Broadband Router.
2. Select <**TCP**> and <**UDP Port**> for each connected camera to the Broadband Router.
   Each port number for the Broadband Router should match that specified in <**Basic**> - <**IP**> from the camera's Setup menu.
3. When done, click [**Save Settings**]. Your settings will be saved.

CONNECTING TO THE CAMERA FROM A SHARED LOCAL PC

1. Launch <**IP Installer**>.
   It will scan for connected cameras and display a list of them.
2. Double-click a camera to access.
   The Internet browser starts and connects to the camera.



■ You can also access the camera in such way you type the IP address of the found camera in the address bar of the Internet browser.

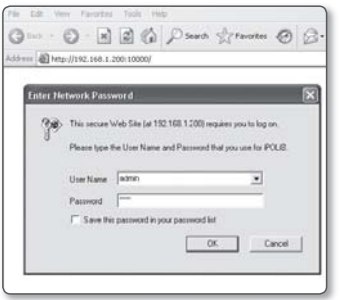
CONNECTING TO THE CAMERA FROM A REMOTE PC VIA THE INTERNET

As a remote PC can not directly access <**IP Installer**>, you should access the camera in the Broadband Router network using DDNS URL of the camera.

1. Before you can access a camera in the Broadband Router network, you should have set the port range forward for the Broadband Router.
2. From the remote PC, launch the Internet browser and type the DDNS URL address of the camera, or the IP address of the Broadband Router in the address bar.
   ex) http://mfffe42.websamsung.net
   ■ For the DDNS URL address, refer to "**To check the DDNS address**". (page 43)

CONNECTING TO THE CAMERA

Normally, you would


Enter Network Password
This secure Web Site (at 192.168.1.200) requires you to log on.
Please type the User Name and Password that you use for POLB.
User Name
admin
Password
Save this password in your password list
OK
Cancel

1. Launch the Internet browser.
2. Type the IP address of the camera in the address bar.
   ex) • IP address (IPv4) : 192.168.1.200
   → http://192.168.1.200
   - the Login dialog should appear.
   • IP address (IPv6) : 2001:230:abcd:ffff:0000:0000:ffff:1111
   → http://[2001:230:abcd:ffff:0000:0000:ffff:1111]

If the HTTP port is other than 80

1. Launch the Internet browser.
2. Type the IP address and HTTP port number of the camera in the address bar.
   ex) IP address : 192.168.1.200:Port number(10000) → http://192.168.1.200:10000
   - the Login dialog should appear.

Using URL

1. Launch the Internet browser.
2. Type the DDNS URL of the camera in the address bar.
   ex) URL address : http://mfffe42.websamsung.net
   - the Login dialog should appear.

Connecting via URL (If the HTTP port is other than 80)

1. Launch the Internet browser.
2. Type the DDNS URL and HTTP port number of the camera in the address bar.
   ex) URL address : http://mfffe42.websamsung.net:Port number(10000)
   → http://mfffe42.websamsung.net:10000
   - the Login dialog should appear.

To check the DDNS address

The DDNS address consists of: <one of the lower-case letters: c, m, p> + <the last 6 digits of the MAC (Ethernet) address> + <websamsung.net>
The small letter will be <c> if the first 6 digits of the MAC (Ethernet) address is <00:00:f0>, or <m> if they are <00:16:6c>, or <p> for <00:68:36> , or <i> for <00:09:18>.
ex) - If the MAC (Ethernet) address is 00:00:f0:ff:fe:42: c + fffe42 + websamsung.net = cfffe42.websamsung.net
- If the MAC (Ethernet) address is 00:16:6c:ff:fe:42: m + fffe42 +websamsung.net = mfffe42.websamsung.net
- If the MAC (Ethernet) address is 00:68:36:ff:fe:42: p + fffe42 +websamsung.net = pfffe42.websamsung.net
- If the MAC (Ethernet) address is 00:09:18:ff:fe:42: i + fffe42 +websamsung.net = ifffe42.websamsung.net

- The above mentioned addresses are simply examples; do not use any of these for connecting purposes.

LOGIN

The default user ID is "**admin**", and the default password is "**4321**".

1. Enter "**admin**" in the <**User Name**> input box.
2. Enter "**4321**" in the <**Password**> input box.
   If the password is changed, enter the changed password instead.
3. Click [**OK**].
   If you have logged in successfully, you will the Live Viewer screen.

Enter Network Password
This secure Web Site (at 192.168.1.200) requires you to log on.
Please type the User Name and Password that you use for iPOLiS.
User Name
admin
Password
Save this password in your password list
OK
Cancel

- For security purposes, ensure that you change the password in <**Basic**> - <**User**>. The administrator ID, "**admin**", is fixed and can not be changed.
- If you check the "**Save this password in your password list**" option when your input is done, you will be logged in automatically without being prompted to enter the login information from next time on.

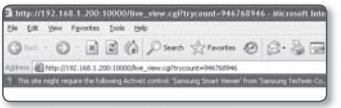
- For this, your computer has installed DirectX 8.1 or later.
  You can get a free download of the latest DirectX from http://www.microsoft.com/download.
  If you are using Internet Explorer 7.0 or 8.0 as the default web browser, you can view the best quality image with a screen ratio of 100%. Reducing the ratio may cut the image on the borders.

INSTALLING ACTIVEX

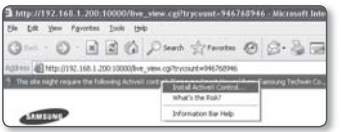
If connecting to a camera for the first time, you will see the installation message. Then, install the required ActiveX to access the camera and control the video from it in real time.

For Windows XP Service Pack 2 users

1. Click the installation message that pops up when you first access the camera.


http://192.168.1.200:10000/live_view.cgi?trycount=946768946 - Microsoft Inte
File Edit View Favorites Tools Help
Search Favorites
This site might require the following ActiveX control: 'Samsung Smart Viewer' from 'Samsung Techwin Co...

2. Click <**Install ActiveX Control...**>.



3. The security warning popup appears, click [**Install**].

Internet Explorer - Security Warning
Do you want to install this software?
Name: Samsung Smart Viewer
Publisher: Samsung Techwin Co., Ltd.
More options
Install
Don't Install
While files from the Internet can be useful, this file type can potentially harm your computer. Only install software from publishers you trust. What's the risk?

4. When the required ActiveX is installed properly after your access to the camera, the Live screen should appear.

- For normal installation, set the Block Popup setting as follows:
  Internet Explorer → Tools → Block Popup → Always allow popups from the current site(A)

USING THE LIVE SCREEN

Item	Description
1 SD Search	Moves to the screen for searching event images from the SD card.
2 Setup	Move to the Setup screen.
3 About	You can check the firmware version, serial number and manufacturer information.
4 Reset Alarm	Resets the Alarm icon. (Alarm and Intelligent Video Analysis icons will disappear.)
5 Capture	Saves the snapshot as an image file in the .jpeg or .bmp format.
6 Print	Prints out the current image.
7 Record	Records the current video in avi movie file format.
8 Full Screen	Displays the Live screen in full screen.
9 Video format	You can set the video format(MJPEG, H.264/MPEG4) for video files. Note that the menu configuration may differ from your setup of <**H.264 & MPEG4 video select**> in Video Setup menu.
10 Alarm output	On : Activates the specified Alarm Out port. Off : Deactivates the specified Alarm Out port. Pulse : Activates the Alarm Out port as much time as specified before deactivating it.

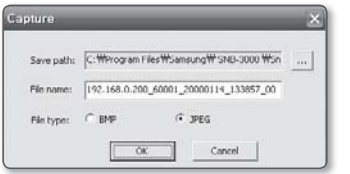
11 **Camera OSD**	Used to retrieve and customize the Camera Setup menu. For selecting and saving each menu item, refer to "**How to use the menu key**". (page 22)
12 **Audio**	Check the Listen or Speak check box for Audio.
13 **Viewer Screen**	Displays the Live video on the screen.

BACKUP

You can capture, print out, and save the snapshot in the specified path.

To capture the snapshot

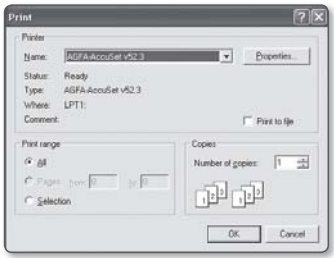
1. Click [ ] on the scene to capture.
   The Capture dialog should appear.
2. Click [**OK**].
   The screenshot will be saved in the specified path.



- Default file path
  - Windows XP : C:\Program Files\Samsung\SNB-3000\SnapShot\Live
    If you want to change the path, click [**Set path** (...)] and specify a path.
  - Windows Vista, Windows 7 : C:\users\[UserID]\Documents\Samsung\SNB-3000\SnapShot\Live
    On the Windows Vista, Windows 7 system, the path to save is fixed.
- The screenshot file will be named automatically in the format of <IP address_Port number_YYYYMMDD_hhmmss_index>.
  ex) 192.168.0.200_60001_20000114_133857_00

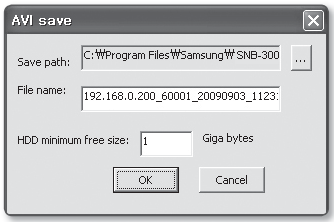
To print out the screenshot

1. Click [ ] on the scene to print out.
   The Print setup dialog appears.
2. Specify the name of the printer connected, and click [**OK**].

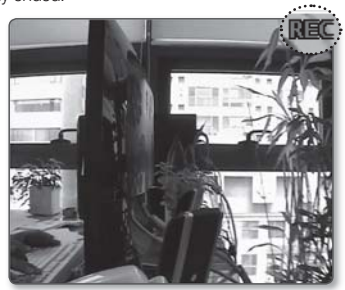


To record a video

1. Click [ ] on the scene to record.
2. You will see the Save AVI dialog; provide the necessary information.
   - Save path : You can change the default saving path.
   - File name : You can change the default file name.
   - HDD minimum free size : If the free space on the HDD is less than the recorded space, recording will be forcibly ended.



3. Click [**OK**].
   Recording will start with the display of <**REC**> on the viewer screen.
   The video file will be saved into the specified path.
4. If you want to quit recording, click [ ] again.



- Default file path
  - Windows XP : C:\Program Files\Samsung\SNB-3000\VideoClip\Live
    If you want to change the path, click [**Set path** (...)] and specify a path.
  - Windows Vista, Windows 7 : C:\users\[UserID]\Documents\Samsung\SNB-3000\VideoClip\Live
    On the Windows Vista, Windows 7 system, the path to save is fixed.
- The screenshot file will be named automatically in the format of <IP address_Port number_YYYYMMDD_hhmmss_index>.
  ex) 192.168.0.200_60001_20090903_112334_00
- If you want to play an .avi file, you must have installed the corresponding DivX codec on your system.
  You can get a free download of the DivX from http://sourceforge.net/projects/ffdshow/.
- A specific codec to MPEG4 is required before you can play videos in the MPEG4 format.
  You can download the codec for MPEG4 videos from www.samsungsecurity.com.

USING THE SD SEARCH VIEWER SCREEN

1. Click <**SD search**> tab in the Live screen.
2. The SD Search Screen appears.

SD Search Viewer Screen layout

Name	Function and description
1 Thumbnail Size	The thumbnail images are displayed based on the selected size.
2 Date	You can select the desired date to search for events generated.
3 Schedule	You can select the desired time to search the schedule events.
4 Alarm input	You can select the desired time to search the alarm events.
5 Intelligent video analysis	You can search for events of intelligent video analysis by specifying the time period.

ACCESSING THE SETUP SCREEN

You can configure the default setting, system, overlay, event and network related settings, and change them as necessary.

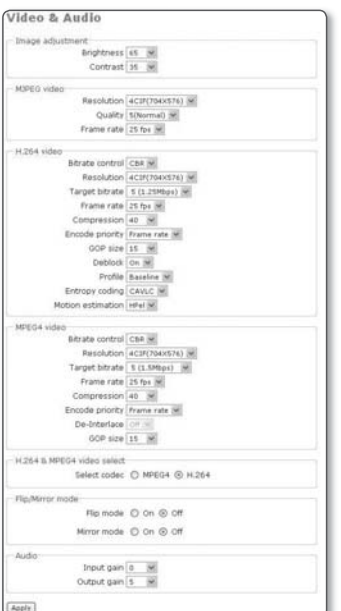
1. In the Live screen, click the <**Setup**> tab.
2. The Setup screen appears.

DEFAULT SETUP

To configure the video & audio settings

You can set the video resolution, quality, CODEC and audio input/output settings.

1. Select <**Basic**> - <**Video & Audio**>. The Video & Audio setup screen appears.
   - Brightness : Adjust the screen brightness from 1 to 100.
   - Contrast : Adjust the contrast from 1 to 100.
   - Resolution : Set the video size of the MPEG4, H.264, and MPEG files.
     - NTSC : 4CIF(704x480), VGA(640X480), CIF(352X240)
     - PAL : 4CIF(704x576), VGA(640X480), CIF(352X288)
   - Quality : Adjust the picture quality from 1 to 10.
   - Frame rate : Select one from 30 fps, 15 fps, 8 fps, 3 fps, and 1 fps.
   - Bitrate control* : Select CBR (Constant Bit Rate) or VBR (Variable Bit Rate) for the compression method.
     - If selecting VBR, you can not set the target bit rate.



- Target bitrate : Transfers video signal at a specified bit rate.
- Compression : Adjust the compression rate from 5 through 100 by 5.
- Encode priority : Set the video transfer method to Frame rate or Quality.
- GOP* size : Select a GOP size between 5 and 15.
- Deblock : This will soften the edges between macro blocks.
- De-Interlace : You can reduce the grid noise by using the de-interlacing function. Only available if MPEG4 resolution is set to 4CIF.

  ▪ If the WDR is set to <**OFF**> or the MPEG4 resolution is not 4CIF, you cannot enable the MPEG4 CODEC's de-interlacing

- Profile : Select Baseline or Main for the H.264 profiling method.
- Entropy coding* : Reduces the compression loss due to encoding.

  ▪ If you set the profile to Baseline, the entropy coding is available only for CAVLC*; if you set it to MAIN, the entropy coding is available for both CAVLC* and CABAC*.

- Motion estimation : Estimates the movement of pixels by determining the motion vector.
- Flip mode : Turn upside down the image that is captured by the camera.
- Mirror mode : Flip horizontal the image that is captured by the camera.
- Input gain : You can set the audio input gain from 0 to 10.
- Output gain : You can set the audio output gain from 0 to 10.

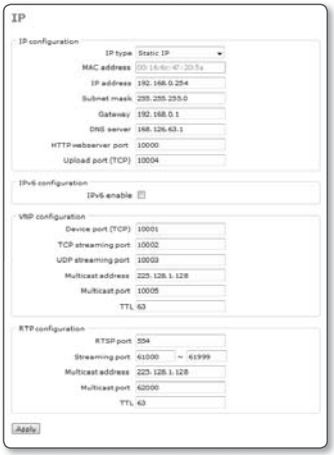
  ▪ If the audio input gain is set to 0, no sound is heard.

2. When done, click [**Apply**].
   Your settings will be saved.

To configure the IP settings

1. Select <**Basic**> - <**IP**>.
   The IP setup window appears.
   - IP configuration : Set the IP and port settings for the camera.
     - IP type : Select one from <**Static IP**>, <**Dynamic IP**>, and <**PPPoE IP**>.

       ▪ If you select <**PPPoE IP**>, you can provide the optional ADSL IP and password. However, the multicast items (multicast address, port, TTL) for VNP and RTP will disappear.



- MAC address : Displays the Ethernet MAC address.
  This is used for creating a DDNS address.
- IP address : Displays the current IP address.
- Subnet mask : Displays the <**Subnet mask**> for the set IP.
- Gateway : Displays the <**Gateway**> for the set IP.
- DNS server : Displays the DNS(Domain Name Service) server address.
- HTTP webserver port : HTTP port used to access the camera via the web browser. The default is 80(TCP).
- Upload port (TCP) : Used to upgrade the software firmware, defaulted to 60004(TCP).

• IPv6 configuration : Obtains the IPv6 address to access the IPv6 network.

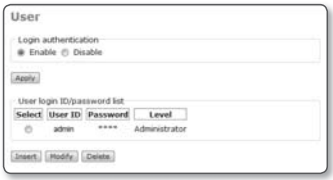
• VNP configuration : Set a port used to transfer video signals with the Samsung protocols.
- Device port (TCP) : Used to control the video signal transfer, defaulted to 60001(TCP).
- TCP streaming port : Video signal transfer port using TCP protocols, defaulted to 60002(TCP).
- UDP streaming port : UDP Port used to transfer video signal with the UDP Unicast protocols. The default is 60003(UDP).
- Multicast address : IP address used to transfer video signal with the UDP Multicast protocols.
  The default is 225.128.1.128, and if you want to change the address, specify it ranging from 224.0.0.0 to 239.255.255.255.
- Multicast port : UDP Port used to transfer video signal with the UDP Multicast protocols. The default is 60005(UDP).
- TTL* : Set the TTL for the VNP packet.
  The default is 63, and if you want to change the address, specify it ranging from 0 to 255.

• RTP configuration : You can set the RTP protocol.
- RTSP port : You can set the RTSP port.
- Streaming port : Used to transfer video signal with the RTP protocols.
  The default range is between 61000 and 61999.
- Multicast address : IP address used to transfer video signal with the RTP protocols.
- Multicast port : Used to transfer video signal with the RTP-protocol multicasting.
- TTL* : You can set the TTL for the RTP packet.

2. When done, click [**Apply**].
Your settings are saved and the system restarts.
The currently opened web browser will be closed.

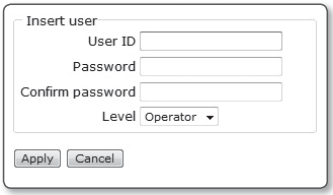
▪ If the Broadband Router has more than one camera connected, you should configure IP and port settings differently with each other.

To set the user account



1. Click <**Basic**> - <**User**>.
   The User setup window appears.
   - Login authentication : You can set to authenticate the login by the user.
     - If you select <**Enable**>, the user should have gone through the login authentication; if selecting <**Disable**>, every user can access the system without the login authentication, having the ordinary user permissions.
     - When done, click [**Apply**].
       Your settings will be saved.
2. Add users or edit user ID or password.
   - User login ID/password list : Displays a list of accessible users ID, passwords, and ratings.
     - You can add up to 10 users.
     - The admin ID is "**admin**".
     - The password for the admin ID can be changed, but not added or deleted.

User Registration

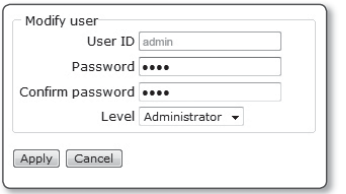


1. From the User setup window, click [**Insert**].
   The Register User window appears.
2. Provide the <**User ID**>, <**Password**>, and <**Confirm password**>, respectively. You can enter up to 9 alphanumeric or special characters (some excluded) for the user ID and password, respectively.
3. Select a user level.
   Select either <**Operator**> or <**User**> for a new user's permission.
4. Click [**Apply**].
   The user registration is completed.

- An existing user ID can not be added duplicate.
- Neither admin ID nor guest ID can be registered.

To edit a registered user account

1. From the User setup window, select a user ID to change.
2. From the User setup window, click [**Modify**].
   The Modify user window appears.
3. Change the <**User ID**>, <**Password**>, <**Confirm password**>, and <**Level**> as you wish.
4. Click [**Apply**].
   The selected user ID will be changed.



To delete a user ID

1. From the User setup window, select a user ID to delete.
2. From the User setup window, click [**Delete**].
   The selected user ID will be deleted.

■ **About the user permission**
Administrator : Can use all functions (change/control settings).
Operator : Can use only the functions available in the Live Viewer.
User : Can only view the video on the Live Viewer.

To set the display language

1. Click <**Basic**> - <**Language**>.
   The Language setup window appears. You can select one from 7 languages (English/Korean/Chinese/French/Italian/Spanish/German).
2. When done, click [**Apply**].
   The selected language will be applied.

To set the date/time

You can obtain the current system time from the NTP server or your PC for your time setting.

1. Select <**System**> - <**Date & Time**>.
   The Date & Time setup window appears.
2. If you select Manual, input the date and time manually.
   Your settings will be saved.
   - Current system time : The specified time in System Time Setup will be applied.

   - System time setup : You can synchronize the system time with the NTP server (time server) or your PC, or specify it manually.

▪ You can specify the time between January 1, 2000 and December 31, 2037.

To set the system time

1. Select a desired address in <**Address**> or select <**Synchronize with PC viewer**>.
2. If you select Manual, input the date and time manually.
3. Click [**Apply**].
   The specified system time will be applied.

▪ <**NTP Server IP**> is provided by a public agency, the list of which is subject to change from time to time.

▪ In a local network, a separate NTP server must be manually defined.

▪ The current time can vary depending on the computers regional (GMT and DST) and country (PC time configuration) settings.

To check the log information

Select <**System**> - <**Log**>.
The Log information list appears.

- **System log list** : Shows the log information about the system changes along with time and IP address.
  - System started: When the camera turns on
  - User login: When the user logs in to the camera
  - System reset: When the camera restarts
  - Network is up: When accessing the network
  - Network is down: When not accessing the network
  - Video param. changed: When the video related parameters are changed
  - System time changed: When the system time is changed
  - Network configuration change: When the network related configurations are changed
  - Alarm occurrence 1, 2: When an alarm is generated
  - Intelligent Video Analysis occurrence: When an intelligent video analysis event is generated.
  - FTP send error: When FTP transfer failed
  - SMTP send error: When sending e-mail message through SMTP server fails.

▪ The maximum of 2000 logs can be recorded.
If the log number is over 2000, the log in the bottom of the log list will be replaced with a new log.

To update the software

Select <**System**> - <**Software update**>.
The Software update window appears.

How to update the software

1. From the software update window, click [**Browse...**].
   The Open dialog appears.
2. Select an updatable file and click [**Open**].
3. From the software update window, click [**Install**].
   The selected file will be unzipped with a start of the update.
   It may take a several minutes to complete the update.

4. When the software update is completed, you will be prompted to restart the system.
5. Click [**OK**] to restart the system.
   Since the current connection is disconnected, you have to connect to the system again.

- If the network is disconnected, the power supply fails, or the PC abnormally operates during the update, the system does not work at all.

To reset the system

Restart or reset the system if it does not work properly or causes a problem.

Select <**System**> - <**Reset**>.
The Reset window appears.

- Restart : Restarts the system.
- Factory default : Resets the system settings to the factory defaults with following two options:
  - Except network parameter : Resets all settings except for the Network Parameters.
  - All : Restores all settings to the default.
    This works the same as pressing the [**RESET**] button on the rear of the camera.

- After the system is reset or restarts, you should try to connect to the camera again.
- It takes several minutes until the system completes rebooting. Wait until the system rebooting is completed and try to connect again.
- After executing <**Factory default**>, you must run the <**IP Installer.exe**> program to change the basic network settings such as IP address, Subnet mask, Gateway, etc., before you can connect to the Internet.

To set the HTTPS

1. Select <**System**> - <**HTTPS**>.
   The HTTPS setup window appears.
   - Secure connection system : Select a secure connection system to use. To use the secure connection mode requiring the public certificate for the secure connection system, you must have installed a signed certificate issued by a certificate authority on your system.

   - Install a public certificate : To install the certificate to camera, you need to type a certificate name (it can be arbitrarily assigned by user), certificate file issued from the authority and a key file. When done, click [**Install**].
     If the certificate is installed successfully, the user-defined certificate name will be displayed. Also, the option button of <**HTTPS (Secure connection mode using the public certificate)**> in the upper side becomes activated.

- To access the camera using HTTPS mode, you have to type the IP address for the camera in the form of "https://<Camera_IP>".

2. When done, click [**Apply**].
   The web viewer will switch to the set secure connection system.

To Set IP Filtering

1. Click <**System**> - <**IP filtering**>.
   The IP Filtering Setup screen appears.
   - Basic policy : You can select the IP filtering policy.
     If you set to Permission, the web server allows all attempting IP addresses except the addresses added in the refusal list.
     If you set to Refusal, the web server allows only IP addresses added in the permitted list and rejects all other IP addresses.

     To apply the IP filtering policy, click [**Apply**] button.
2. Enter the IP address and subnet mask into the IP field to be allowed or rejected.
   The Filtering range* will differ depending on specified IP address and subnet mask.

OVERLAY SETUP

You can display text on the screen.

To set the text

1. Select <**Overlay**> - <**Overlay text**>.
   The Overlay Text setup window appears.
2. When done, click [**Apply**].
   Your settings will be saved.
   - Overlay text settings : If you select <**Disable**>, the overlay text will not be displayed; If selecting <**Enable**>, it will display on the screen.
   - Show date : Set to display the date information on the bottom screen.
     - Output Format : Select a display format of the date information.
       YYYY-MM-DD : Year-Month- Day / MM-DD-YYYY : Month-Day-Year / DD-MM-YYYY : Day-Month-Year

- Show time : Set to display the time information on the bottom screen.
  - Output Format : Select a display format of the time information.
    24hr : Displays the time in the 24-hour format.
    12hr : Displays the time in the 12-hour format.
- Text color : Select black or white for the text color.
- Background color : Select black or white for the background color.

EVENT SETUP

To set the event transfer function

You can set the FTP/email server (SMTP) to transfer the alarm images present in the camera, in case an alarm event occurs.

Select <**Event**> - <**Transfer setup**>.
The Image transfer setup window appears.

- For more information on commercial SMTP services, contact the SMTP service provider.

To test the FTP transfer

Click [**Test**].
This will test if the image is transferred to the specified FTP server properly.
When the test on the FTP server connection and transfer is done, a message of <**(Verified)**> will be displayed.
You will see an error message if the test fails. If this is the case, check the FTP server status or the settings again.

- **FTP transfer** : With this, you can transfer alarm images to the FTP server. If the initial FTP server setting and the connection status are not verified, the <**(Not verified)**> message appears.

- Use passive mode : Select this option when the passive mode connection is inevitable due to the firewall or FTP server setting.
- FTP server address : Enter the IP address of a FTP server to which an alarm image will be transferred.
- Upload path : You can specify the path of the FTP directory to which you will transfer an alarm image.
  You can specify the path by just typing </directory name> or <directory name> in this field.
  If nothing is specified, the path will be defaulted to the root directory of the FTP server.
- Port : The FTP port is defaulted to 21. This value can be changed according to the FTP server setting.
- User ID : Provide the user account ID to access the FTP server.
- Password : Provide the user account password to access the FTP server.

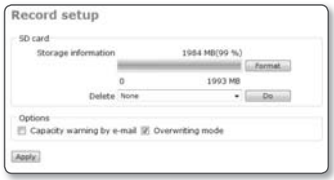
• **E-mail(SMTP) transfer** : With this setting, you can transfer alarm images to the email server. This function is available only for the SMTP email server. When the initial SMTP server setting and connection are not verified, the <**Not verified**> message appears.

- SMTP server address : Enter the SMTP server address to use when you send an email.
  ex) 10.240.56.228
- Port : Enter a port number to use when you send an email. The default is 25.
- User ID : Provide the user account ID to access the SMTP server.
- Password : Provide the user account password to access the SMTP server.
- E-mail sender : Enter the address of the email sender. If the sender address is incorrect, the email from the sender may be classified as SPAM by the SMTP server and may not be sent.
- E-mail receiver : Enter the address of the email receiver.
- Title : Enter the subject of the email to send.
- Message : Enter the content of the email to send.

To test the email transfer

Click [**Test**].
This will test if the image is transferred to the specified SMTP server properly. When the test on the SMTP server connection and transfer is done, a message of <**(Verified)**> will be displayed.
You will see an error message if the test fails.
If this is the case, check the SMTP server status or the settings again.

To setup the record



1. Click <**Event**> - <**Record setup**>.
   The Record setup window appears.
2. To complete the setting, click the [**Apply**] button.
   The settings are saved.
   - SD card : Enables you to verify data saved on the SD memory card and format the memory card itself. It is possible to set to automatically delete movie clips recorded before a certain period of time (e.g. 1 week, 1 month, or 1 year).
   - Options : Determine whether or not you wish to receive Email notification of insufficient capacity warnings.

To set an alarm image

You can configure to send message via FTP/E-mail (SMTP) or to save recording into the SD memory card.
Select a transfer method when an event occurs or the schedule transfer function is activated.

1. Select <**Event**> - <**Alarm image**>.
   The Alarm Image setup window appears.
   - **Transfer mode** : You can select alarm message notification method among FTP/E-mail transfer and SD Card recording.
     - FTP transfer : The image is sent to the specified FTP address.
     - E-mail transfer : The image is sent to the specified email address.
     - SD Card Record : Saves images into the SD memory card.

     ▪ If an SD memory card is not inserted, the corresponding button will be disabled. In this case, insert the SD memory card into the slot and refresh to enable the button.

     ▪ If the SD memory card is ejected while the button is checked, the camera automatically restarts.

   - **Transferred image naming setup** : You can set the file name of an alarm image to be sent when an alarm is triggered or during the scheduled transfer.
   - **Pre/post alarm image** : You can set to save the pre or post alarm image.
     - Number of image : The frame rate per second can be one among 1, 2, 3, and 5.
     - Pre-alarm duration : The pre alarm duration can be one among 5 seconds, 10 seconds, 15 seconds, and 30 seconds. You can send a pre-alarm image of up to 30 seconds before the alarm is triggered.
       (The max time differs, depending on the frame rate)

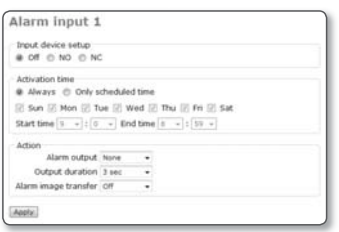
- Post-alarm duration : The post alarm duration can be one among 5 seconds, 10 seconds, 15 seconds, and 30 seconds. You can send a post-alarm image of up to 30 seconds after the alarm is triggered.
  (The max time differs, depending on the frame rate)

■ The pre/post alarm duration is not available in SMTP transfer mode.
Only one image at the corresponding time will be transferred.

2. When done, click [**Apply**].
   Your settings will be saved.

To set the alarm input

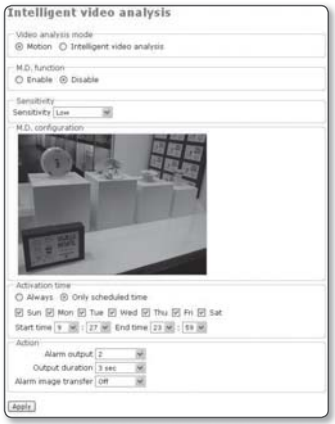
1. Select <**Event**> - <**Alarm input 1**> or <**Alarm input 2**>.
   The Alarm Input setup window appears.
2. When done, click [**Apply**].
   Your settings will be saved.



- **Input device setup** : Select an input type according to the characteristics of the alarm sensor on the rear of the camera.
  - Off : Turns off the alarm input setting.
  - NO (Normal Open) : It is normally open, but if it is closed, an alarm will be triggered.
  - NC (Normal Close) : It is normally closed, but if it is open, an alarm will be triggered.
- **Activation time** : You can set a time to execute a specific command when an alarm occurs.
  - Always : Always executes the specified command when an alarm occurs.
  - Only scheduled time : Activates notification as configured only when alarm events occurred during the specified time period.
- **Action** : You can set an action to execute when an alarm occurs.
  - Alarm output : Set the alarm output port to which the alarm signal is transferred.
  - Output duration : Set the period of time to output the alarm signal to the specified alarm output port when an alarm occurs.
    If a new alarm event is detected during the alarm output, the delay time is recalculated based on the detection time of the recent alarm.
  - Alarm image transfer : If you select <**On**>, you can transfer JPEG images to a registered address via FTP or SMTP server or save images into the SD memory card according to the setting in <**Event**> - <**Transfer setup**>.

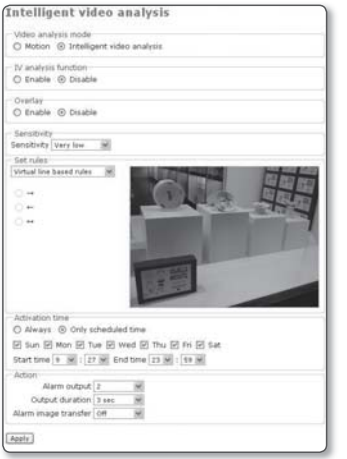
To set the Motion Detection

1. Select a motion detection mode.
2. Specify the use of motion detection.
3. Select a sensitivity level of the motion detection.
4. Place the cursor at a point in the video and drag it to whatever you need.
   - You can specify up to 4 motion detection areas.
5. Specify the activation time and activation condition.
   - For more information about <**Activation time**> and <**Action**>, refer to "**Alarm input**". (page 62)
6. When done, click [**Apply**].



To set the Intelligent Video Analysis

1. Select an Intelligent Video Analysis mode.
2. Set whether to use the Intelligent Video Analysis function.
3. Set whether you want to use the overlay or not.
4. Select a sensitivity level of the camera's object detection.
5. Specify the event rules.
6. Specify the activation time and activation condition.
   - For more information about <**Activation time**> and <**Action**>, refer to "**Alarm input**". (page 62)
7. When done, click [**Apply**].



- Motion Detection and Intelligent Video Analysis cannot be used simultaneously.
- If camera is capturing a close object, the video analysis capability may degrade.

- In the following cases, the video analysis function may not produce proper result on configured event and motion detections.
  - The subject color or brightness is similar to the background
  - Multiple random movement continues due to scene change or other reasons.
  - When object that is fixed continues to move in the same position.
  - An object hides other objects behind.
  - 2 or more objects overlaps or 1 object splits into multiple objects.
  - Too fast object (for detection, one object should be found overlapping between contiguous frames).
  - Reflection / blur / shadow due to direct sunlight, illumination, or headlamp
  - In severe snow, rain, wind or in dawn / dusk
  - Moving object approaches to the camera too close

- **Overlay** : If <**Enable**> is selected, configured event rules and motion frame are displayed on the Live screen. Selecting <**Disable**> will not display overlay information.

  ▪ Motion frame is displayed in two types on the Live screen.
  Green frame – indicates the moving object
  Red frame – Temporarily displays the moving object detected by the configured event rules.

- **Sensitivity** : Sets the sensitivity of the intelligent video analysis.
  - Sensitivity : Select the sensitivity among <**Very high**>, <**High**>, <**Normal**>, <**Low**>, and <**Very low**>.
    When selected with <**Very high**>, the intelligent video analysis functions on the smallest motion detection.

- **Set rules**

  You can set the event rules.

  - Virtual line based rules : You can configure event rules for up to 3 virtual lines.

  <Event Types>
  Pass : Event is generated if a moving object crosses the virtual line in the specified direction (→, ←, ↔)

  - Defined area based rules : You can configure event rules for up to 3 user-defined areas.

  <Event Types>

  ① Entering : Event is generated if a moving object enters the defined area from outside to inside.

  ② Exiting : Event is generated if a moving object exits the defined area from inside to outside.

  ③ Appearing : An object that has not been existed in the area until the previous frame suddenly appears inside the configured area, not passing the border

  ④ Disappearing : An object that has been existed in the area until the previous frame suddenly disappears, not passing the border.

  - Entire area based rules : You can configure event rules for the entire video area.

<Event Types>

① Appearing: An object that has not been existed until the previous frame appears in the area.

② Disappearing: An object that has been existed until the previous frame disappears from the area.

③ Scene Change: This event is generated by a complete scene change, such as camera veiled by hand or changed camera's aiming, etc.

- Object size: The maximum object size of motion detection for each event generation. The minimum size can be adjusted in 5 levels.
  Minimum size (the minimum rectangular motion detection area): Step 1: 6x6 (pixel), Step 5: 50x50 (pixel)
  Maximum size (the maximum rectangular motion detection area): Step 1: 60x60 (pixel), Step 5: 320x240 (pixel)
  The initial setup for the minimum is 6x6 and for the maximum is 320x240.

- **Activation time** : Sets the operation time of the intelligent video analysis.
  - Always : Configured action is performed whenever an intelligent video analysis event occurs.
  - Only scheduled time : Configured action is performed when intelligent video analysis event occurs during the specified time period.
- **Action** : You can configure the action for an intelligent video analysis event.
  - Alarm output : Sets the alarm output port for the signaling the intelligent video analysis event.
  - Output duration : Sets the alarm signal dwell time to the Alarm Output port on an intelligent video analysis event.
    When another intelligent video analysis event follows the previous one, the output duration time is reset based on the most recent event.
  - Alarm image transfer : If selected <**Enable**>, depending on your setting of <**Event**> - <**Transfer setup**>, the image in JPEG format will be sent to the registered address via FTP or e-mail (SMTP), or saved in the SD memory card.

To set the scheduled transfer

You can set to transfer the JPEG image to the FTP/SMTP server saved in the SD memory card at a specific interval.

1. Select <**Event**> - <**Schedule**>.
   The Schedule Transfer setup window appears.

   - **Schedule transfer function** :
     If selecting <**Enable**>, the schedule transfer function will be activated; if selecting <**Disable**>, it will be deactivated.
   - **Transfer interval** : You can set the time interval to transfer images.
     You can set the unit of the interval to <**seconds**> or <**minutes**>; you can also set to transfer one image per 5/15/30/45/60 seconds, or one per 5/15/30/45/60 minutes.
   - **Activation time** : You can set a time to execute a specific command when a schedule transfer event occurs.
     - Always : Always sends an image at the set interval.
     - Only scheduled time : Periodically transfers image only during the specified time period.

2. When done, click [**Apply**].
   Your settings will be saved.

NETWORK SETUP

To set the video transfer mode

You can control the transfer rate according to the video transfer mode and network speed.

1. Select <**Network**> - <**Streaming type**>. The Video Transfer setup window appears.
2. When done, click [**Apply**]. Your settings will be saved.
   - **VNP streaming** : You can set the Samsung Protocol (VNP) for the streaming service.
     - Protocol : Select a video transfer protocol from TCP*, UDP (Unicast)*, and UDP (Multicast)*.
       - Speaking to the camera unit through microphone is not supported.
       - Multicast backbone (MBone) is not supported; you can access the camera only in the multicast local network environment.
   - **RTP streaming** : You can set the RTP Protocol or the streaming service.
     - Protocol : Select a video transfer protocol from UDP (Unicast) and UDP (Multicast).

To set the DDNS

DDNS is an abbreviation of Dynamic Domain Name Service that converts the IP address of a camera into a general Host Name so that the user can easily remember it and enables connecting a camera with a fixed Host Name even if the IP address of the camera may be dynamically changed.

1. Select <**Network**> - <**DDNS**>. The DDNS setup window appears.
2. When done, click [**Apply**]. Your settings will be saved.

■ For checking the DDNS address, refer to "**To check the DDNS address**". (page 43)

PROFILE

CAMERA SETUP MENU		STANDARD	ITS	BACKLIGHT	DAY/NIGHT	GAMING	BANK
Parent Menu	Sub-menus						
IRIS		ALC	ALC	ALC	ALC	ALC	ALC
	ALC	-	-	-	-	-	-
	LENS	DC	DC	DC	DC	DC	DC
	LEVEL	0	0	0	0	0	0
	BACKLIGHT	OFF	OFF	WDR	OFF	OFF	WDR
MOTION		(F.FAST) ---	(F.FAST) ---	NORM	(F.FAST) ---	SLOW	(F.FAST) ---
DNR		MID	MID	MID	MID	MID	MID
SHUTTER		OFF	AUTO 1/250	OFF	OFF	OFF	OFF
SENSE UP		AUTO X4	AUTO X2	AUTO X4	AUTO X4	AUTO X4	AUTO X4
XDR		MID	MID	MID	MID	MID	MID
DAY/NIGHT		AUTO	AUTO	DAY	AUTO	DAY	AUTO
	NIGHT	-	-	-	-	-	-
	BURST	OFF	ON	OFF	OFF	OFF	OFF
WHITE BAL		DAY	DAY/NIGHT	DAY	DAY/NIGHT	DAY	DAY
	DAY	-	-	-	-	-	-
	MODE	ATW2	ATW1	ATW1	ATW1	ATW1	ATW2
	RED	0	0	0	0	0	0
	BLUE	0	0	0	0	0	0
	NIGHT	-	-	-	-	-	-
	BRIGHTNESS	Custom Setting	MID	Custom Setting	MID	Custom Setting	Custom Setting
	MODE	0FF	ATW2	OFF	ATW2	OFF	OFF
	RED	Custom Setting	0	Custom Setting	0	Custom Setting	Custom Setting
	BLUE	Custom Setting	0	Custom Setting	0	Custom Setting	Custom Setting
DETAIL		2	2	2	2	2	2

TERMINOLOGY

- GOP : You can set between 5 and 15 for the MPEG4 and H.264 CODEC.
  The default is 15, and if set to 15, one I-Frame will be output per 15 frames as one I-Frame and 14 P-Frames constitute the GOP.
  The lower the GOP size is, the better the quality is; however, the bit rate as well as the data size will increase, causing a lower of the fps. GOP(Group of Pictures) is a set of video frames for MPEG4 and H.264 format compression, indicating a collection of frames from the initial I-Frame (key frame) to the next I-Frame. GOP consists of 2 kinds of frames: I-Frame and P-Frame. I-Frame is the basic frame for the compression, also known as Key Frame, which contains one complete image data. P-Frame contains only the data that has changed from the preceding I-Frame.
- Entropy coding : Data transfer technology used to reduce the compression loss from encoding.
  - CAVLC (Context-adaptive variable-length coding): Records a higher compression loss rate than CABAC.
  - CABAC (Context-adaptive binary arithmetic coding): Shows a lesser compression loss than CAVLC.
- Bitrate Control
  - CBR(Constant Bitrate)
    This will transfer video data in an equal size at all times, regardless of the video complexity. The video quality may be deteriorated, depending on the video complexity.
  - VBR(Variable Bitrate)
    The amount of video data to transfer may differ, depending on the video complexity. This enables receiving video data in an equal quality at all times.
- TTL : TTL stands for “Time To Live”, which you can specify to prevent loss of data packet that passes through multiple-staged routers. Each router decreases the TTL value by one each time a packet passes it through; If the TTL value reaches 0, the packet cannot further pass through a router.
- TCP : It is a general purpose protocol used for transmission that requires reliability. With constant communication between the sender and recipient, it provides high reliability against transmission data loss; however, it has imitation to transmit a large amount of data in real time at a high speed.
  It enables reliable data transmission over xDSL and cable network at a relatively slow speed.
- UDP (Unicast): It refers to a system that transmits data between only one transmitter and one receiver (1:1).
- UDP (Multicast): It refers to the data transfer protocol in one-to-many (1:N) between the transmitting and receiving terminals; although it alleviates the network load, it requires <Multicast> router.
  For more information such as whether the network over which the camera is installed supports <Multicast>, contact the network administrator.
- UDP : It is a protocol appropriate to transmit a large amount of data such as multimedia data at a high speed. However, with its nonconnection structure, it records a higher transmission efficiency than TCP especially in a high LAN environment faster than 100Mbps.

- Filtering range

  The filtering range is calculated based on IP address and subnet mask provided by user as follows:

  The subnet value defines the number of masked bits, which will mask the IP address that is converted into 32-bit binary; rest of masked out bits are ignored to produce the range as shown below.

  Ex) IP address : 128.128.128.128

  ① If the Subnet is set to 8, converted IP is 1000 0000.1000 0000.1000 0000.1000 0000 and the subnet directs to find matches from the first bit to the 8th bit, produces the filtering range of 1000 0000.???? ????.???? ????.???? ????, which will be converted back to IP address range of 128.0.0.0 ~ 128.255.255.255.

  ② If the Subnet is set to 10, converted IP is 1000 0000.1000 0000.1000 0000.1000 0000 and the subnet directs to find matches from the first bit to the 10th bit, produces the filtering range of 1000 0000.0000.10?? ????.???? ????.???? ????, which will be converted back to IP address range of 128.0.0.0 ~ 128.191.255.255.

  ③ If the Subnet is set to 20, converted IP is 1000 0000.1000 0000.1000 0000.1000 0000 and the subnet directs to find matches from the first bit to the 20th bit, produces the filtering range of 1000 00001000 0000.1000 ????.???? ????, which will be converted back to IP address range of 128.128.128.0 ~ 128.128.143.255.

  ④ If the Subnet is set to 30, converted IP is 1000 0000.1000 0000.1000 0000.1000 0000 and the subnet directs to find matches from the first bit to the 30th bit, produces the filtering range of 1000 0000.1000 0000.1000 0000.1000 00??, which will be converted back to IP address range of 128.128.128.128 ~ 128.128.128.131.

  ⑤ If the Subnet is set to 32, converted IP is 1000 0000.1000 0000.1000 0000.1000 0000 and the subnet directs to find matches from the first bit to the 32th bit, produces the filtering range of 1000 0000.1000 0000.1000 0000.1000 0000, which will be converted back to IP address of 128.128.128.128.

SPECIFICATIONS

Item			Description	
			NTSC	PAL
Camera Type	Color/BW		Color	
Image	Device		1/3" Super-HAD PS CCD	
	Pixels	Total	811 x 508	795 x 596
		Effective	768 x 494	752 x 582
Scanning	System		Progressive	
	Horizontal Frequency		15.734 Hz	15.625 Hz
	Vertical Frequency		59.94 Hz	50 Hz
Min. Scene Illumination	Color		Sens off : 0.12 Lux(15 IRE), 0.2 Lux(30 IRE), 0.4Lux(50 IRE)@F1.2 Sens up x512 : 0.00023 Lux(15 IRE), 0.0005 Lux(30 IRE), 0.0008Lux(50 IRE)@F1.2	
	B/W		Sens off : 0.012 Lux(15 IRE), 0.02 Lux(30 IRE), 0.04Lux(50 IRE)@F1.2 Sens up x512 : 0.000023 Lux(15 IRE), 0.00005 Lux(30 IRE), 0.00008Lux(50 IRE)@F1.2	
Functions	Number of Privacy Zone		12 ea	
	Day/Night		Day/Night/AUTO(Hard Method)	
	WDR		Off/On (x128)	Off/On (x160)
	Extended Dynamic Range		Off/On (Level Setting)	
	D-Zoom		x1 ~ x16 (x0.1 STEP)	
	PIP		Off/On (Advanced)	
	High Speed Shutter		1/60 ~ 1/10Ksec	1/50 ~ 1/10Ksec
	Flickerless		Off/On	
	Sens Up		x2 ~ x512	
	BLC		Off/On (Area Setting)	
	AGC		Off/On (Max.Level Setting)	
	ELC		Off/On (~ 1/200Ksec)	
	Camera ID		Off/On (Max.54ea/2Line)	
	White Balance		ATW1/ATW2/AWC/3200K/5600K	
	Digital Noise Reduction		Off/On (Adaptive 3D+2D)	
	Digital Image Stablization		Off/On	
	Etc. Function		Detail, Reverse(H/V), Posi/Nega	

Item			Description	
			NTSC	PAL
Resolution	Horizontal		600 TV Lines	
	Vertical		350 TV Lines	
Video Output	Video Output		VBS 1.0Vp-p	
S/N Ratio	S/N Ratio		about 52 dB	
Lens	Lens Drive Type		MANUAL/AI(VIDEO/DC)	
	Mount Type		CS/C	
Network Board	OS		Embedded Linux	
	Hardware	Flash memory	32M byte	
		RAM	256M byte	
		DSP	TI Davinci	
		Ethernet	RJ-45 (10/100BASE-T)	
		PoE	Yes (IEEE802.3af)	
Alarm	Input		2 ea	
	Output		2 ea	
Video	Compression		H.264 / MPEG4 / MJPEG Multiple Codec (H.264 / MPEG4 selectable) Simultaneous Dual Streaming	
	Resolution	4CIF	704x480	704x576
		VGA	640x480	
		CIF	352x240	352x288
	Frame Rate		30, 15, 8, 3, 1 fps	25, 13, 6, 3, 1 fps
	Quality		1 ~ 10 level	
Audio	Compression		G.711 : Full Duplex, 64kbps, 8KHz sampling	
OSD	Camera Control and Adjustment		OSD menu on Video (Menu enter/exit, move by Web UI) * Some key adjustment menus will be supported by CGI API.	
Intelligent Video Analysis Detection	Sensitivity		Very High, High, Normal, Low, Very Low	

Item			Description	
			NTSC	PAL
Protocol	IP		IPv4 / IPv6	
	Network Protocol	IPv4	TCP/IP, UDP/IP, RTP(UDP), RTP(TCP), RTSP, NTP, HTTP, HTTPS, SSL, DHCP PPPoE, FTP, SMTP, ICMP, IGMP, SNMPv1/v2c/v3(MIB-2), ARP, DNS, DDNS	
		IPv6	TCP/IP, HTTP, HTTPS, SSL, DHCP	
	Streaming		Unicast (TCP, UDP), Multicast (UDP)	
	Security		HTTPS Login Authentication Digest Login Authentication	
	DDNS		Supporting Samsung DDNS and Public DDNS services	
	ONVIF Conformance		Yes	
Connection	Maximum User Access		Max 10 Users at Unicast (TCP, UDP) Mode Max 20 Users at Multicast (UDP) Mode	
	User Access Level	Administrator	Live Monitoring, Alarm I/O control, OSD menu control, SETUP	
		Operator	Live Monitoring, Alarm I/O control	
		User	Live Monitoring	
Event Management	Alarm Input		JPEG Image transfer : FTP, SMTP, SD Card Notification : notify to viewer or by E-mail (one image attachment) Alarm Out	
	Intelligent Video Analysis Detection			
	Schedule		JPEG Image transfer : FTP, SMTP, SD Card	
Web Browser Viewer (Default)	Supported OS		Windows XP, Windows VISTA, Windows 7	
	Supported Browser		Internet Explorer 6.0 or Higher	
	UI Language		E/F/G/S/I/C/K	
	S/W upgrade		Support	
Video Player	RTP/RTSP streaming		Quicktime, VLC player	
Video Management Software	Video Management System		Samsung iPOLiS 3rd Party S/W appliction	
Application	IP Installation		IP Installer Application for All Samsung IP Devices	

Item			Description	
			NTSC	PAL
SDK	HTTP API	CGI Command	Provides functionality to control cameras and set/retrieve internal parameter values. Get JPEG image or MJPEG stream Alarm In/Out control	
	RTP/RTSP API		RTP Header, RTSP Command Document	
	ActiveX	SDK	ActiveX API for viewing data streams from IP camera.	
Power			AC24V±10%(60Hz±0.3Hz)/ DC12V+10%/-5% / PoE (Power over Ethernet)	
Power Consumption			Max. 6W(DC12V), Max. 7W(AC24V), Max. 8W(PoE)	
Operating Temp.			-10˚C~50˚C	
Operating Humidity			~90%	
Dimension (W X H X D)			W72 X H60 X D139mm	
Weight			About 435g	

FRAME RATE (NTSC)

■ Test Condition: MJPEG - Resolution(CIF), Quality(1), Frame rate(1)
H.264 - Bitrate control(CBR), Compression(40), Encode Priority(Frame rate), GOP size(15), Deblock(ON), Profile(Baseline), Entropy coding(CAVLC), Motion estimation(HPel)
MPEG4 - Bitrate control(CBR), Compression(40), Encode Priority(Frame rate), GOP size(15)

❖ MPEG4 (4CIF)

Quality \ Frame Rate	30 FPS	15 FPS	8 FPS	3 FPS	1 FPS
LEVEL10	4239 Kbps 23 FPS	2765 Kbps 15 FPS	1290 Kbps 7 FPS	737 Kbps 4 FPS	221 Kbps 1 FPS
LEVEL9	3686 Kbps 24 FPS	2304 Kbps 15 FPS	1075 Kbps 7 FPS	614 Kbps 4 FPS	184 Kbps 1 FPS
LEVEL8	3072 Kbps 25 FPS	1843 Kbps 15 FPS	860 Kbps 7 FPS	492 Kbps 4 FPS	147 Kbps 1 FPS
LEVEL7	2396 Kbps 26 FPS	1382 Kbps 15 FPS	645 Kbps 7 FPS	369 Kbps 4 FPS	111 Kbps 1 FPS
LEVEL6	1659 Kbps 27 FPS	922 Kbps 15 FPS	430 Kbps 7 FPS	246 Kbps 4 FPS	74 Kbps 1 FPS
LEVEL5	1336 Kbps 29 FPS	691 Kbps 15 FPS	323 Kbps 7 FPS	184 Kbps 4 FPS	55 Kbps 1 FPS
LEVEL4	1133 Kbps 30 FPS	576 Kbps 15 FPS	269 Kbps 7 FPS	154 Kbps 4 FPS	46 Kbps 1 FPS
LEVEL3	922 Kbps 30 FPS	461 Kbps 15 FPS	215 Kbps 7 FPS	123 Kbps 4 FPS	37 Kbps 1 FPS
LEVEL2	691 Kbps 30 FPS	346 Kbps 15 FPS	161 Kbps 7 FPS	92 Kbps 4 FPS	28 Kbps 1 FPS
LEVEL1	461 Kbps 30 FPS	230 Kbps 15 FPS	108 Kbps 7 FPS	61 Kbps 4 FPS	18 Kbps 1 FPS

❖ H.264 (4CIF)

Quality \ Frame Rate	30 FPS	15 FPS	8 FPS	3 FPS	1 FPS
LEVEL10	2298 Kbps 19 FPS	1229 Kbps 10 FPS	737 Kbps 6 FPS	369 Kbps 3 FPS	147 Kbps 1 FPS
LEVEL9	1751 Kbps 19 FPS	1198 Kbps 13 FPS	645 Kbps 7 FPS	369 Kbps 4 FPS	111 Kbps 1 FPS
LEVEL8	1536 Kbps 20 FPS	1075 Kbps 14 FPS	538 Kbps 7 FPS	307 Kbps 4 FPS	92 Kbps 1 FPS
LEVEL7	1352 Kbps 22 FPS	897 Kbps 15 FPS	430 Kbps 7 FPS	246 Kbps 4 FPS	74 Kbps 1 FPS
LEVEL6	1129 Kbps 25 FPS	691 Kbps 15 FPS	369 Kbps 8 FPS	184 Kbps 4 FPS	55 Kbps 1 FPS
LEVEL5	960 Kbps 25 FPS	576 Kbps 15 FPS	307 Kbps 8 FPS	154 Kbps 4 FPS	46 Kbps 1 FPS
LEVEL4	799 Kbps 26 FPS	461 Kbps 15 FPS	246 Kbps 8 FPS	123 Kbps 4 FPS	37 Kbps 1 FPS
LEVEL3	622 Kbps 27 FPS	346 Kbps 15 FPS	184 Kbps 8 FPS	92 Kbps 4 FPS	28 Kbps 1 FPS
LEVEL2	445 Kbps 29 FPS	230 Kbps 15 FPS	123 Kbps 8 FPS	61 Kbps 4 FPS	18 Kbps 1 FPS
LEVEL1	223 Kbps 29 FPS	115 Kbps 15 FPS	61 Kbps 8 FPS	31 Kbps 4 FPS	9 Kbps 1 FPS

❖ MPEG4 (VGA)

Quality \ Frame Rate	30 FPS	15 FPS	8 FPS	3 FPS	1 FPS
LEVEL10	4055 Kbps 22 FPS	2580 Kbps 14 FPS	1290 Kbps 7 FPS	737 Kbps 4 FPS	221 Kbps 1 FPS
LEVEL9	3533 Kbps 23 FPS	2304 Kbps 15 FPS	1075 Kbps 7 FPS	614 Kbps 4 FPS	184 Kbps 1 FPS
LEVEL8	2949 Kbps 24 FPS	1843 Kbps 15 FPS	860 Kbps 7 FPS	492 Kbps 4 FPS	147 Kbps 1 FPS
LEVEL7	2304 Kbps 25 FPS	1382 Kbps 15 FPS	645 Kbps 7 FPS	369 Kbps 4 FPS	111 Kbps 1 FPS
LEVEL6	1536 Kbps 25 FPS	922 Kbps 15 FPS	430 Kbps 7 FPS	246 Kbps 4 FPS	74 Kbps 1 FPS
LEVEL5	1152 Kbps 25 FPS	691 Kbps 15 FPS	323 Kbps 7 FPS	184 Kbps 4 FPS	55 Kbps 1 FPS
LEVEL4	998 Kbps 26 FPS	576 Kbps 15 FPS	269 Kbps 7 FPS	154 Kbps 4 FPS	46 Kbps 1 FPS
LEVEL3	799 Kbps 26 FPS	461 Kbps 15 FPS	246 Kbps 8 FPS	123 Kbps 4 FPS	37 Kbps 1 FPS
LEVEL2	622 Kbps 27 FPS	346 Kbps 15 FPS	184 Kbps 8 FPS	92 Kbps 4 FPS	28 Kbps 1 FPS
LEVEL1	415 Kbps 27 FPS	230 Kbps 15 FPS	123 Kbps 8 FPS	61 Kbps 4 FPS	18 Kbps 1 FPS

❖ H.264 (VGA)

Quality \ Frame Rate	30 FPS	15 FPS	8 FPS	3 FPS	1 FPS
LEVEL10	2089 Kbps 17 FPS	1229 Kbps 10 FPS	737 Kbps 6 FPS	369 Kbps 3 FPS	147 Kbps 1 FPS
LEVEL9	1659 Kbps 18 FPS	1014 Kbps 11 FPS	553 Kbps 6 FPS	276 Kbps 3 FPS	111 Kbps 1 FPS
LEVEL8	1459 Kbps 19 FPS	845 Kbps 11 FPS	538 Kbps 7 FPS	307 Kbps 4 FPS	92 Kbps 1 FPS
LEVEL7	1229 Kbps 20 FPS	737 Kbps 12 FPS	430 Kbps 7 FPS	246 Kbps 4 FPS	74 Kbps 1 FPS
LEVEL6	1014 Kbps 22 FPS	691 Kbps 15 FPS	323 Kbps 7 FPS	184 Kbps 4 FPS	55 Kbps 1 FPS
LEVEL5	883 Kbps 23 FPS	576 Kbps 15 FPS	269 Kbps 7 FPS	154 Kbps 4 FPS	46 Kbps 1 FPS
LEVEL4	707 Kbps 23 FPS	461 Kbps 15 FPS	215 Kbps 7 FPS	123 Kbps 4 FPS	37 Kbps 1 FPS
LEVEL3	553 Kbps 24 FPS	346 Kbps 15 FPS	161 Kbps 7 FPS	92 Kbps 4 FPS	28 Kbps 1 FPS
LEVEL2	384 Kbps 25 FPS	230 Kbps 15 FPS	108 Kbps 7 FPS	61 Kbps 4 FPS	18 Kbps 1 FPS
LEVEL1	200 Kbps 26 FPS	115 Kbps 15 FPS	54 Kbps 7 FPS	31 Kbps 4 FPS	9 Kbps 1 FPS

❖ MPEG4 (CIF)

Quality \ Frame Rate	30 FPS	15 FPS	8 FPS	3 FPS	1 FPS
LEVEL10	1382 Kbps 30 FPS	691 Kbps 15 FPS	369 Kbps 8 FPS	184 Kbps 4 FPS	55 Kbps 1 FPS
LEVEL9	1152 Kbps 30 FPS	576 Kbps 15 FPS	307 Kbps 8 FPS	154 Kbps 4 FPS	46 Kbps 1 FPS
LEVEL8	922 Kbps 30 FPS	461 Kbps 15 FPS	246 Kbps 8 FPS	123 Kbps 4 FPS	37 Kbps 1 FPS
LEVEL7	691 Kbps 30 FPS	346 Kbps 15 FPS	184 Kbps 8 FPS	92 Kbps 4 FPS	28 Kbps 1 FPS
LEVEL6	461 Kbps 30 FPS	230 Kbps 15 FPS	123 Kbps 8 FPS	61 Kbps 4 FPS	18 Kbps 1 FPS
LEVEL5	346 Kbps 30 FPS	173 Kbps 15 FPS	92 Kbps 8 FPS	46 Kbps 4 FPS	14 Kbps 1 FPS
LEVEL4	288 Kbps 30 FPS	144 Kbps 15 FPS	77 Kbps 8 FPS	38 Kbps 4 FPS	12 Kbps 1 FPS
LEVEL3	230 Kbps 30 FPS	115 Kbps 15 FPS	61 Kbps 8 FPS	31 Kbps 4 FPS	9 Kbps 1 FPS
LEVEL2	173 Kbps 30 FPS	86 Kbps 15 FPS	46 Kbps 8 FPS	23 Kbps 4 FPS	7 Kbps 1 FPS
LEVEL1	151 Kbps 30 FPS	76 Kbps 15 FPS	40 Kbps 8 FPS	20 Kbps 4 FPS	6 Kbps 1 FPS

❖ H.264 (CIF)

Frame Rate / Quality	30 FPS	15 FPS	8 FPS	3 FPS	1 FPS
LEVEL10	922 Kbps 30 FPS	461 Kbps 15 FPS	215 Kbps 7 FPS	123 Kbps 4 FPS	37 Kbps 1 FPS
LEVEL9	691 Kbps 30 FPS	346 Kbps 15 FPS	184 Kbps 8 FPS	92 Kbps 4 FPS	28 Kbps 1 FPS
LEVEL8	576 Kbps 30 FPS	288 Kbps 15 FPS	134 Kbps 7 FPS	77 Kbps 4 FPS	23 Kbps 1 FPS
LEVEL7	461 Kbps 30 FPS	230 Kbps 15 FPS	108 Kbps 7 FPS	61 Kbps 4 FPS	18 Kbps 1 FPS
LEVEL6	346 Kbps 30 FPS	173 Kbps 15 FPS	81 Kbps 7 FPS	46 Kbps 4 FPS	14 Kbps 1 FPS
LEVEL5	288 Kbps 30 FPS	144 Kbps 15 FPS	67 Kbps 7 FPS	38 Kbps 4 FPS	12 Kbps 1 FPS
LEVEL4	230 Kbps 30 FPS	115 Kbps 15 FPS	54 Kbps 7 FPS	31 Kbps 4 FPS	9 Kbps 1 FPS
LEVEL3	173 Kbps 30 FPS	86 Kbps 15 FPS	40 Kbps 7 FPS	23 Kbps 4 FPS	7 Kbps 1 FPS
LEVEL2	115 Kbps 30 FPS	58 Kbps 15 FPS	27 Kbps 7 FPS	15 Kbps 4 FPS	5 Kbps 1 FPS
LEVEL1	58 Kbps 30 FPS	29 Kbps 15 FPS	13 Kbps 7 FPS	8 Kbps 4 FPS	2 Kbps 1 FPS

FRAME RATE (PAL)

■ Test Condition: MJPEG - Resolution(CIF), Quality(1), Frame rate(1)
H.264 - Bitrate control(CBR), Compression(40), Encode Priority(Frame rate), GOP size(15), Deblock(ON), Profile(Baseline), Entropy coding(CAVLC), Motion estimation(HPel)
MPEG4 - Bitrate control(CBR), Compression(40), Encode Priority(Frame rate), GOP size(15)

❖ MPEG4 (4CIF)

Quality \ Frame Rate	25 FPS	13 FPS	6 FPS	3 FPS	1 FPS
LEVEL10	4645 Kbps 21 FPS	2654 Kbps 12 FPS	1327 Kbps 6 FPS	664 Kbps 3 FPS	221 Kbps 1 FPS
LEVEL9	4055 Kbps 22 FPS	2212 Kbps 12 FPS	1106 Kbps 6 FPS	553 Kbps 3 FPS	184 Kbps 1 FPS
LEVEL8	3391 Kbps 23 FPS	1769 Kbps 12 FPS	885 Kbps 6 FPS	442 Kbps 3 FPS	147 Kbps 1 FPS
LEVEL7	2544 Kbps 23 FPS	1327 Kbps 12 FPS	664 Kbps 6 FPS	332 Kbps 3 FPS	111 Kbps 1 FPS
LEVEL6	1769 Kbps 24 FPS	885 Kbps 12 FPS	442 Kbps 6 FPS	221 Kbps 3 FPS	74 Kbps 1 FPS
LEVEL5	1382 Kbps 25 FPS	664 Kbps 12 FPS	332 Kbps 6 FPS	166 Kbps 3 FPS	55 Kbps 1 FPS
LEVEL4	1152 Kbps 25 FPS	553 Kbps 12 FPS	276 Kbps 6 FPS	138 Kbps 3 FPS	46 Kbps 1 FPS
LEVEL3	922 Kbps 25 FPS	442 Kbps 12 FPS	221 Kbps 6 FPS	111 Kbps 3 FPS	37 Kbps 1 FPS
LEVEL2	691 Kbps 25 FPS	332 Kbps 12 FPS	166 Kbps 6 FPS	83 Kbps 3 FPS	28 Kbps 1 FPS
LEVEL1	461 Kbps 25 FPS	221 Kbps 12 FPS	111 Kbps 6 FPS	55 Kbps 3 FPS	18 Kbps 1 FPS

❖ H.264 (4CIF)

Quality \ Frame Rate	25 FPS	13 FPS	6 FPS	3 FPS	1 FPS
LEVEL10	2359 Kbps 16 FPS	1180 Kbps 8 FPS	737 Kbps 5 FPS	442 Kbps 3 FPS	147 Kbps 1 FPS
LEVEL9	1991 Kbps 18 FPS	1106 Kbps 10 FPS	664 Kbps 6 FPS	332 Kbps 3 FPS	111 Kbps 1 FPS
LEVEL8	1751 Kbps 19 FPS	1014 Kbps 11 FPS	553 Kbps 6 FPS	276 Kbps 3 FPS	92 Kbps 1 FPS
LEVEL7	1475 Kbps 20 FPS	885 Kbps 12 FPS	442 Kbps 6 FPS	221 Kbps 3 FPS	74 Kbps 1 FPS
LEVEL6	1161 Kbps 21 FPS	664 Kbps 12 FPS	332 Kbps 6 FPS	166 Kbps 3 FPS	55 Kbps 1 FPS
LEVEL5	968 Kbps 21 FPS	553 Kbps 12 FPS	276 Kbps 6 FPS	138 Kbps 3 FPS	46 Kbps 1 FPS
LEVEL4	811 Kbps 22 FPS	442 Kbps 12 FPS	221 Kbps 6 FPS	111 Kbps 3 FPS	37 Kbps 1 FPS
LEVEL3	608 Kbps 22 FPS	332 Kbps 12 FPS	166 Kbps 6 FPS	83 Kbps 3 FPS	28 Kbps 1 FPS
LEVEL2	424 Kbps 23 FPS	221 Kbps 12 FPS	111 Kbps 6 FPS	55 Kbps 3 FPS	18 Kbps 1 FPS
LEVEL1	230 Kbps 25 FPS	111 Kbps 12 FPS	55 Kbps 6 FPS	28 Kbps 3 FPS	9 Kbps 1 FPS

❖ MPEG4 (VGA)

Quality \ Frame Rate	25 FPS	13 FPS	6 FPS	3 FPS	1 FPS
LEVEL10	4424 Kbps 20 FPS	2654 Kbps 12 FPS	1327 Kbps 6 FPS	664 Kbps 3 FPS	221 Kbps 1 FPS
LEVEL9	3871 Kbps 21 FPS	2212 Kbps 12 FPS	1106 Kbps 6 FPS	553 Kbps 3 FPS	184 Kbps 1 FPS
LEVEL8	3097 Kbps 21 FPS	1769 Kbps 12 FPS	885 Kbps 6 FPS	442 Kbps 3 FPS	147 Kbps 1 FPS
LEVEL7	2433 Kbps 22 FPS	1327 Kbps 12 FPS	664 Kbps 6 FPS	332 Kbps 3 FPS	111 Kbps 1 FPS
LEVEL6	1769 Kbps 24 FPS	885 Kbps 12 FPS	442 Kbps 6 FPS	221 Kbps 3 FPS	74 Kbps 1 FPS
LEVEL5	1382 Kbps 25 FPS	664 Kbps 12 FPS	332 Kbps 6 FPS	166 Kbps 3 FPS	55 Kbps 1 FPS
LEVEL4	1152 Kbps 25 FPS	553 Kbps 12 FPS	276 Kbps 6 FPS	138 Kbps 3 FPS	46 Kbps 1 FPS
LEVEL3	922 Kbps 25 FPS	442 Kbps 12 FPS	221 Kbps 6 FPS	111 Kbps 3 FPS	37 Kbps 1 FPS
LEVEL2	691 Kbps 25 FPS	332 Kbps 12 FPS	166 Kbps 6 FPS	83 Kbps 3 FPS	28 Kbps 1 FPS
LEVEL1	461 Kbps 25 FPS	221 Kbps 12 FPS	111 Kbps 6 FPS	55 Kbps 3 FPS	18 Kbps 1 FPS

❖ H.264 (VGA)

Quality \ Frame Rate	25 FPS	13 FPS	6 FPS	3 FPS	1 FPS
LEVEL10	2507 Kbps 17 FPS	1327 Kbps 9 FPS	737 Kbps 5 FPS	442 Kbps 3 FPS	147 Kbps 1 FPS
LEVEL9	1991 Kbps 18 FPS	1217 Kbps 11 FPS	664 Kbps 6 FPS	332 Kbps 3 FPS	111 Kbps 1 FPS
LEVEL8	1659 Kbps 18 FPS	1106 Kbps 12 FPS	553 Kbps 6 FPS	276 Kbps 3 FPS	92 Kbps 1 FPS
LEVEL7	1401 Kbps 19 FPS	885 Kbps 12 FPS	442 Kbps 6 FPS	221 Kbps 3 FPS	74 Kbps 1 FPS
LEVEL6	1106 Kbps 20 FPS	664 Kbps 12 FPS	332 Kbps 6 FPS	166 Kbps 3 FPS	55 Kbps 1 FPS
LEVEL5	968 Kbps 21 FPS	553 Kbps 12 FPS	276 Kbps 6 FPS	138 Kbps 3 FPS	46 Kbps 1 FPS
LEVEL4	774 Kbps 21 FPS	442 Kbps 12 FPS	221 Kbps 6 FPS	111 Kbps 3 FPS	37 Kbps 1 FPS
LEVEL3	608 Kbps 22 FPS	332 Kbps 12 FPS	166 Kbps 6 FPS	83 Kbps 3 FPS	28 Kbps 1 FPS
LEVEL2	424 Kbps 23 FPS	221 Kbps 12 FPS	111 Kbps 6 FPS	55 Kbps 3 FPS	18 Kbps 1 FPS
LEVEL1	230 Kbps 25 FPS	111 Kbps 12 FPS	55 Kbps 6 FPS	28 Kbps 3 FPS	9 Kbps 1 FPS

❖ MPEG4 (CIF)

Quality \ Frame Rate	25 FPS	13 FPS	6 FPS	3 FPS	1 FPS
LEVEL10	1382 Kbps 25 FPS	664 Kbps 12 FPS	332 Kbps 6 FPS	166 Kbps 3 FPS	55 Kbps 1 FPS
LEVEL9	1152 Kbps 25 FPS	553 Kbps 12 FPS	276 Kbps 6 FPS	138 Kbps 3 FPS	46 Kbps 1 FPS
LEVEL8	922 Kbps 25 FPS	442 Kbps 12 FPS	221 Kbps 6 FPS	111 Kbps 3 FPS	37 Kbps 1 FPS
LEVEL7	691 Kbps 25 FPS	332 Kbps 12 FPS	166 Kbps 6 FPS	83 Kbps 3 FPS	28 Kbps 1 FPS
LEVEL6	461 Kbps 25 FPS	221 Kbps 12 FPS	111 Kbps 6 FPS	55 Kbps 3 FPS	18 Kbps 1 FPS
LEVEL5	346 Kbps 25 FPS	166 Kbps 12 FPS	83 Kbps 6 FPS	41 Kbps 3 FPS	14 Kbps 1 FPS
LEVEL4	288 Kbps 25 FPS	138 Kbps 12 FPS	69 Kbps 6 FPS	35 Kbps 3 FPS	12 Kbps 1 FPS
LEVEL3	230 Kbps 25 FPS	111 Kbps 12 FPS	55 Kbps 6 FPS	28 Kbps 3 FPS	9 Kbps 1 FPS
LEVEL2	173 Kbps 25 FPS	83 Kbps 12 FPS	41 Kbps 6 FPS	21 Kbps 3 FPS	7 Kbps 1 FPS
LEVEL1	151 Kbps 25 FPS	73 Kbps 12 FPS	36 Kbps 6 FPS	18 Kbps 3 FPS	6 Kbps 1 FPS

❖ H.264 (CIF)

Quality \ Frame Rate	25 FPS	13 FPS	6 FPS	3 FPS	1 FPS
LEVEL10	922 Kbps 25 FPS	442 Kbps 12 FPS	221 Kbps 6 FPS	111 Kbps 3 FPS	37 Kbps 1 FPS
LEVEL9	691 Kbps 25 FPS	332 Kbps 12 FPS	166 Kbps 6 FPS	83 Kbps 3 FPS	28 Kbps 1 FPS
LEVEL8	576 Kbps 25 FPS	276 Kbps 12 FPS	138 Kbps 6 FPS	69 Kbps 3 FPS	23 Kbps 1 FPS
LEVEL7	461 Kbps 25 FPS	221 Kbps 12 FPS	111 Kbps 6 FPS	55 Kbps 3 FPS	18 Kbps 1 FPS
LEVEL6	346 Kbps 25 FPS	166 Kbps 12 FPS	83 Kbps 6 FPS	41 Kbps 3 FPS	14 Kbps 1 FPS
LEVEL5	288 Kbps 25 FPS	138 Kbps 12 FPS	69 Kbps 6 FPS	35 Kbps 3 FPS	12 Kbps 1 FPS
LEVEL4	230 Kbps 25 FPS	111 Kbps 12 FPS	55 Kbps 6 FPS	28 Kbps 3 FPS	9 Kbps 1 FPS
LEVEL3	173 Kbps 25 FPS	83 Kbps 12 FPS	41 Kbps 6 FPS	21 Kbps 3 FPS	7 Kbps 1 FPS
LEVEL2	115 Kbps 25 FPS	55 Kbps 12 FPS	28 Kbps 6 FPS	14 Kbps 3 FPS	5 Kbps 1 FPS
LEVEL1	58 Kbps 25 FPS	28 Kbps 12 FPS	14 Kbps 6 FPS	7 Kbps 3 FPS	2 Kbps 1 FPS

TROUBLESHOOTING

PROBLEM	SOLUTION
I can't access the camera from a web browser.	• Check to make sure that the camera's Network settings are appropriate. • Check to make sure that all network cables have been connected properly. • If connected using DHCP, verify that the camera is able to acquire dynamic IP addresses without any problem. • If connected using a DDNS URL, verify that the MAC address has been properly entered. • If the camera is connected to a router, verify that port forwarding is properly configured.
Viewer got disconnected during monitoring.	• Connected Viewers become disconnected upon any change to camera or network configurations. • Check all network connections. • If the camera is connected over an xDSL network, it' s possible for Viewer to disconnect under poor network conditions.
I cannot connect to the system using a tab browser of Internet Explorer 7.0.	• When you try to connect to the system using a tab browser, the same cookie information is shared, resulting in errors when connected. Therefore, instead of using a tab browser, open a new browser window to connect to the system.
The camera connected to the network is not detected in the IP installer program.	• Turn off the firewall settings on your PC and then search the camera again.
Images overlap.	• Check whether two or more cameras are set to a single multicast address instead of different addresses. If a single address is used for multiple cameras, the images may overlap.
No image appears.	• If the transmission method is set to multicast, check whether there is a router that supports multicast in the LAN the camera is connected to.

PROBLEM	SOLUTION
No JPEG file is transferred via FTP/ SMTP on occurrence of intelligent video analysis event of camera even when the <Intelligent Video Analysis> is set to <Enable>.	• Verify the settings in the following sequence: A. NTP must be properly configured. B. The <Intelligent Video Analysis> should be set to <Enable>. C. Alarm Video Transmission must be enabled. D. Check for scheduling conflict.
Can <Set Rules> be configured even when the <Intelligent Video Analysis> is set to <Disable>?	• Yes, it can be. You can set rules for events despite of the intelligent video analysis setting.
No signal is found at the Alarm Output port even when an intelligent video analysis event is generated.	• Check alarm output port settings.
Cannot record into the SD memory card.	• Check if the memory card is defective. • Check if the write protection tab of the memory card is set to “LOCK”.
SD memory indicator does not turn on even when the SD memory card is inserted.	• Check if the memory card is defective. • Check if the <SD Card Record> is checked in <Setup> - <Event> - <Alarm image> menu.
SD memory card is inserted but the camera does not operate properly.	• Check if the memory card is inserted in the proper direction. Operation of memory card that is formatted by other devices is not guaranteed with this camera unit • Format the memory card again in <Setup> - <Event> - <Record setup> menu.
Cannot format the SD memory card.	• Check if the write protection tab of the memory card is set to "LOCK".

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